THE GAME THAT NEVER ENDS

HOW LAWYERS SHAPE THE VIDEOGAME INDUSTRY

JULIEN MAILLAND

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The Game That Never Ends

How Lawyers Shape the Videogame Industry

Julien Mailland

The MIT Press
Cambridge, Massachusetts
London, England

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Acknowledgments

Arnold Schwarzenegger has repeated many times that despite his individual accomplishments as an immigrant to the United States, from Mr. Olympia to most bankable Hollywood star to Governor of California, he should never be called a self-made man: "It gives the wrong impression, that we can do it alone. None of us can." Likewise, a single-author book takes a village.

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Nashville, Indiana, January 7, 2024

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Series Foreword

What might histories of games tell us not only about the games themselves but also about the people who play and design them? We think that the most interesting answers to this question will have two characteristics. First, the authors of game histories who tell us the most about games will ask big questions. For example, how do game play and design change? In what ways is such change inflected by societal, cultural, and other factors? How do games change when they move from one cultural or historical context to another? These kinds of questions forge connections to other areas of game studies, as well as to history, cultural studies, and technology studies.

The second characteristic we seek in "game-changing" histories is a wide-ranging mix of qualities partially described by terms such as *diversity*, *inclusiveness*, and *irony*. Histories with these qualities deliver interplay of intentions, users, technologies, materials, places, and markets. Asking big questions and answering them in creative and astute ways strikes us as the best way to reach the goal of not an isolated, general history of games but rather of a body of game histories that will connect game studies to scholarship in a wide array of fields. The first step, of course, is producing those histories.

Game Histories is a series of books that we hope will provide a home—or maybe a launch pad—for the growing international research community whose interest in game history rightly exceeds the celebratory and descriptive. In a line, the aim of the series is to help actualize critical historical study of games. Books in this series will exhibit acute attention to historiography and historical methodologies, while the series as a whole will encompass the wide-ranging subject matter we consider crucial for the relevance of historical game studies. We envisage an active series with output that will reshape how electronic and other kinds of games are understood, taught, and researched, as well as broaden the appeal of games for the allied fields such as history of

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computing, history of science and technology, design history, design culture, material culture studies, cultural and social history, media history, new media studies, and science and technology studies.

The Game Histories series will welcome but not be limited to contributions in the following areas:

- Multidisciplinary methodological and theoretical approaches to the historical study of games.
- Social and cultural histories of play, people, places, and institutions of gaming.
- Epochal and contextual studies of significant periods influential to and formative of games and game history.
- Historical biography of key actors instrumental in game design, development, technology, and industry.
- Games and legal history.
- Global political economy and the games industry (including indie games).
- Histories of technologies pertinent to the study of games.
- Histories of the intersections of games and other media, including such topics as game art, games and cinema, and games and literature.
- Game preservation, exhibition, and documentation, including the place of museums, libraries, and collectors in preparing game history.
- Material histories of game artifacts and ephemera.

Henry Lowood, Stanford University
Raiford Guins, Indiana University Bloomington

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1 A Tale of Two Cartridges

Like many casual gamers around the world, I have been addicted to *Tetris* since I first played it. The year was 1990, and I had procured a bootleg floppy disk for my Atari STE computer from my junior-high schoolyard in Paris, France. Unlike Ed Logg, who designed the Atari-Tengen *Tetris* port for the Nintendo Entertainment System (NES), I never claimed a world championship, but I did enjoy a moderate amount of success ten years later as the reigning champion of my college fraternity. Practice makes perfect. Nowadays, I keep two *Tetris* cartridges in my rec room. One is the official Nintendo-developed NES cartridge. The other one is Atari-Tengen's version. That one is a rarity. Along with most of Atari-Tengen's other cartridges for the NES, including *Super Sprint*, *Ms. Pac-Man*, and *Indiana Jones*, it was recalled from the retail shelves following a series of US federal court orders issued from 1989 to 1992.[1] But since the interwebs appear to have been designed for buying stuff off eBay, I was able to secure one anyway. It's a nice companion to my bootleg floppy.

Meanwhile, while the US federal courts ruled that Atari-Tengen had infringed on Nintendo's copyright in the process of reverse-engineering Nintendo's console to produce the unlicensed NES cartridges, they ruled, in a concomitant case, that independent game developer Accolade was perfectly legitimate in producing its own unlicensed cartridges for Sega's up-and-coming Genesis console (known as the Mega Drive outside of North America). That was a fork in the road for the respective paths of these two pioneer game publishers, Atari-Tengen and Accolade. While NES gamers around the world were deprived of Atari-Tengen's unlicensed creations, Genesis/Mega Drive owners were able to enjoy Accolade's titles such as *Ishido*, *HardBall!*, *Pelé!*, and *Jack Nicklaus' Power Challenge Golf*. How come? Oftentimes, the

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Figure 1.1
Two cartridges and a floppy. Left, Atari-Tengen's was removed from the shelves following several losses in US federal courts. Right, the Nintendo-approved NES cartridge. Center, a floppy procured in the schoolyard. Author's collection.

measure of success of companies is dependent on the quality of their products. Not in this case. Atari-Tengen was arguably one of the finest game developers at the time. The diverging fates of these two influential game companies instead rested on arcane legal principles and on the complexity of the legal practice. Historians of the electronic games industry have so far overlooked the importance of laws, legal institutions, and complex interwoven business/engineering/legal strategies, at the heart of which sit lawyers. This book closes the gap.

Why can US municipalities *not* prohibit minors' access to *violent* videogames (including *Mortal Kombat*, where you can rip your opponent's head and spinal cord off!!) in arcades where minors are otherwise allowed? Why can US states, or the US federal government, *not* mandate a legally enforceable rating system, while the German government is purely and simply banning games as innocuous as Activision's *River Raid* for the Atari VCS?

Why was *FIFA 15*, a nonviolent soccer (football) game recalled from French shelves by a judge in 2014? Why was *Vodka Drunkenski*, a character in Nintendo-Japan's *Punch-Out!!*, with a clear pun for a name (vodka/drunk), renamed *Soda Popinski* in the US ("pop" is another name for "soda" in the United States), and then called by the same name in Western Europe, where the pun made no sense? Why won't French game cartridges work in Quebec's consoles, even though the Canadian province speaks the same language? Why was the Dutch-American conglomerate Philips-Magnavox barred by US

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Figure 1.2
Screenshot of Activision's *River Raid* for the Atari VCS (1982), banned in Germany.

courts from distributing a clone of *Pac-Man*, *K.C. Munchkin!*, while US coin-op giant Williams received a judicial blessing to make its own *Pac-Man* clone, *Jawbreaker*? This book answers these questions, and many more, as I focus on landmark legal cases that have had a long-lasting impact on gamers and reveal the usually invisible role of lawyers in shaping an industry.

One of MIT Press' Game Histories series' editors has correctly lamented that "descriptive historical chronologies . . . still constitute large chunks of game history writing," about "the 'great men' narrative that plagues the history of games, design, and technology," and that "the reigning history of games, with their game-centric view, do not offer the complex social relations" from which videogames and industries emerge.[2] He called for investigations that will "radically open up game design so that design decisions and processes become better documented, interpreted, and explained for the benefit of historical study." This is where this book fits. It is not, to further borrow from Guins, about "writing about forgotten games, or redeeming those that have been overlooked," but about "having a larger toolbox from which to reconstruct game histories."[3] The present investigation, then, takes place within the social-scientific tradition of opening up the black box of technical and cultural systems that the videogame industry is a part of.[4] It introduces a

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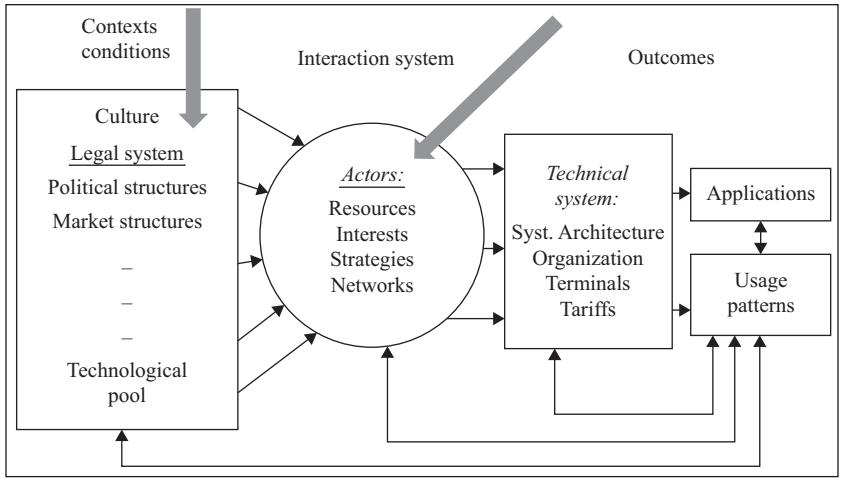

Figure 1.3
A social-constructivist model for understanding technical systems. Adapted from Renate Mayntz and Volker Schneider, "The Dynamics of System Development in a Comparative Perspective: Interactive Videotex in Germany, France, and Britain," in *The Development of Large Technical Systems*, ed. Renate Mayntz and Thomas Hughes (Frankfurt am Main: Campus Verlag, 1988), 263–298. Arrows/underline added.

new element found in this box—the lawyer—to highlight its important role in shaping videogame history.

Thomas Hughes noted as early as 1987 that "legislative artifacts, such as regulatory laws, can also be part of technological systems."[5] Yet, few scholars, outside the strict legal field, have picked up on this insight. This book is a law book for non-lawyers (although lawyers will hopefully get their kicks, too). Using the classic social-constructivist model for understanding the development of technical systems, we will observe both the legal system as part of the context and lawyers as actors within the interaction system (figure 1.3).

Guins' work on Atari coin-op machines expands the range of actors and practices we need to observe to "achieve a more holistic view—or at least one that can account for the many relationships of dependency—of a coin-op machine"; specifically, he goes beyond Atari's engineering department, to embrace the industrial design, marketing, and sales departments.[6] Here, I expand the scope of actors and practices within organizations that make up the videogame industry to include lawyers, and even further outward to the broader legal ecosystem, including lawmakers, judges, and the

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legal and political cultures within which they interact with the industry as a whole. This has seldom been done systematically before, although recent trends in Silicon Valley history point toward related efforts and have started unpacking industrial systems and market structures, including labor relations and cultures, and incorporating other corporate-like actors such as venture capitalists.[7]

An interesting take on this approach of integrating the law into the story is found in Edmonds and Houdek's *Baseball Meets the Law*, in which the authors make a convincing argument that "a deeper understanding of the sport, both on and off the field, demands at least some 'knowledge of when and how baseball and law have come together.'"[8] The piece is designed around four hundred vignettes of "baseball situations in which a statute, court decision administrative ruling, legislative hearing, presidential action, or legal document such as a contract played a part, or in which a lawyer or government official took a critical role."[9] But although the "400 individual accounts . . . taken together, give a much clearer picture of the profound effect that the law in its many forms has had, and continues to have, on baseball," the piece is merely a chronology that lacks meta-analysis. Therefore, it is only a starting point in including lawyers into broader industry studies.

The practice of examining the role of lawyers in shaping the videogame industry needs to be developed beyond anecdotes and subjected to academic rigor if we are to gain a better understanding of *why* the industry has evolved the way that it has. This practice is not new in other subfields of science and technology studies, broadly considered. Gerardo Con Diaz's *Software Rights* shows how patent law has transformed software development in the United States.[10] Siva Vaidhyanathan's *Copyrights and Copywrongs* demonstrates how certain modern dominant interpretations of intellectual property regimes threaten free speech and creativity.[11] In the field of internet policy, Lawrence Lessig's bestseller, *Code and Other Laws of Cyberspace*, shows not just that the hardware and software that make the code of the internet are what regulates our behavior in cyberspace, but that this code is itself shaped by laws and cultural legal practices.[12] I have myself applied these theoretical insights and methodological approach to demonstrate ways in which the post Net'95 internet in France, and before that the Minitel network, developed as a result of certain legal traditions in that country.[13] I posit that, just as lawyers and legal culture have contributed to shaping the technologies and practices of online life, they have done the same to the videogame industry.

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Yet, this story is conspicuously absent from serious historical game scholarship. In fact, the amount of scholarship on the impact of laws on games is inversely proportional to the importance of the law on the practical experience of gamers. There exists a small amount of scholarship on videogame law in the legal field, but it generally focuses on technicalities behind specific cases rather than on the broader social-constructivist process through which lawyers influence an industry over periods of time.[14] This scholarship is also not particularly accessible to a broader audience because of its highly technical legal focus.[15] When legal issues pertinent to the videogame industry are addressed in passing in the history of technology or game studies fields (usually in short book chapters or fleeting mentions), the focus is on intellectual property.[16] In contrast, here, I address a coherent and extensive set of legal fields that influence the industry (including contract law, employment law, antitrust, content regulation and free speech, and international trade, in addition to patents, copyrights, trademarks, and their interplay), as well as industry practice, with a focus on lawyers acting in a variety of settings.

This book is not an exhaustive history of fifty years of commercial videogaming. Writing an exhaustive legal history of any industry is both impossible and undesirable.

Impossible because even if one were able to track every single court case, such a lengthy plethora would obfuscate the fact that most of the legal craft goes unrecorded by design and is practiced behind closed doors: in stuffy lawyers' and bankers' offices, in boardrooms, in regulators' offices, in design rooms, in front offices, in back offices, and in a myriad of very public places that are so public that the anonymity afforded by the multitude creates privacy for those who are discreet enough not to stick out: airplanes, hotel lobbies, ball games, upscale restaurants, dive bars, casino hot tubs, and, yes, strip clubs (industries are a product of their places and times, and the reader will encounter situations that would not meet the thresholds of today's standards of political correctness; but, just like court cases, historians need to tell stories the way they happened). Even the legal work that actually gets recorded, whether on fax paper, hard drives, USB sticks, hard or soft floppy disks, tapes, restaurant napkins (literally), legal notepads, or pocket notebooks, is largely ephemeral. In the twenty-five years in which I've been alternating between my academic and my technology-industry-lawyer hats on two continents, I've observed regulators lose files (sometimes intentionally), law firms send documents to storage so sloppily that they were never to be found again,

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chief financial officers misplace certificates of deposit, well-meaning office managers trash "useless old files" to make room for new ones or because "we won that court case already so we didn't need to keep a record of it," and hard drives and email records wiped out by efficiency-obsessed IT guys because "Marc no longer works here, so why did you want to save five years of his email exchanges anyways?" The paucity of data regarding interactions between in-house lawyers (lawyers employed full-time as staff for a given corporation) and the rest of their organizations is appalling to the historian, and lawyers are partly responsible for it. But lawyers' compulsive attention to ensuring extreme secrecy is a legitimate extension of the legally mandated and ethically necessary principle of attorney-client privilege. By design, the legal craft and its products, besides court rulings and regulatory filings, simply aren't meant to become public.

There also seems to be a lack of interest from organizations in anything legal-related. Press clippings, sales fliers, marketing reports, and draft design plans seem sexier to corporate archivists—at least, in my experience researching the electronic games, computers, and telecommunications' industries as an academic, they tend to be better preserved. Most cases get settled before they go to trial or get ruled on, and are therefore only partially recorded (if at all). Court records themselves are hardly comprehensive. Only select court cases actually get published, and even then, supporting documentation, including witness depositions, which when they exist provide a wealth of resources for the historian and have historically been maintained on paper, are being destroyed at rapid pace to make space.[17] A variety of legal documents, usually preserved by the business or engineering actors of the story, such as Ralph Baer (Sanders/Magnavox) and Al Alcorn (Atari), have made their way into university archives and the Internet Archive. Even then, it is not unusual for them to be heavily redacted, making the puzzle even more difficult to solve (figure 1.4).

Even if one could achieve the unachievable and uncover all that has been, writing an exhaustive legal history of the videogame industry would be *undesirable*. It is easy in any research to get lost in the maze of details, and the law is no exception. Oceans of facts also distract from the big picture theoretical points. Legal casebooks that compile court cases to comprehensively cover a given field of the law might seem endless to weary law students, but they are in fact curated to present key inflection points. I use the same approach, although this is not a law school casebook. Opening the black

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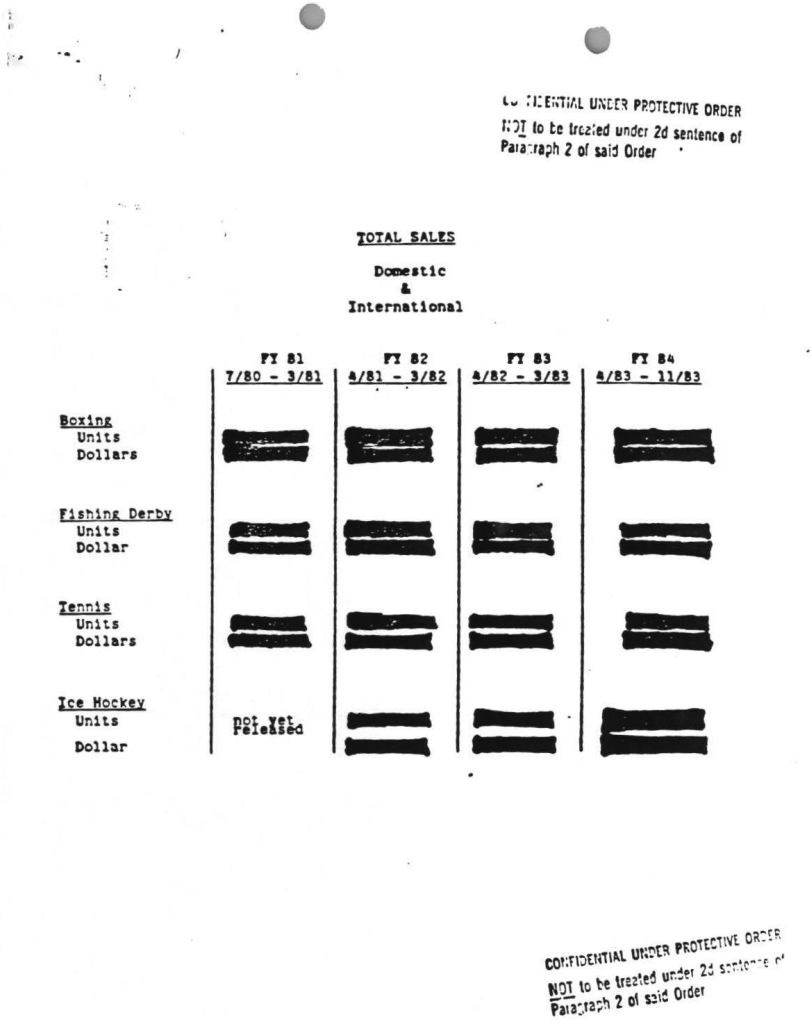

Figure 1.4
Activision's sales figures are redacted by court order in *Magnavox v. Activision* (chapter 2), making the historian's task that much more difficult.

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boxes of landmark cases and other inflection points, this book is designed to bring broader and deeper context to why, legal technicalities aside, certain situations turned out the way they did, and why the videogame industry has evolved the way it has. To do so, it is more important to observe and analyze the *type* of interactions between lawyers and organizations than to record *all* interactions.

A series of case studies—not in the legal sense, but as vignettes of the human comedy—shed light on why and how the role of lawyers is key for understanding the videogame industry. The case studies locate lawyers and their impact throughout the life cycle of games, from company creation and original design to success and, oftentimes, to recall and destruction: lawyers on the plant floor, in the boardroom, in court, at the bars with their clients, interacting with their kin and with public opinion, and in international trade. This series of curated stories, selected because they mark inflection points in videogame history and analyzed using historical and social-scientific tools, also reveals broader patterns of legal influence that can in turn be ported elsewhere to better grasp how industries in general evolve.

I collected data using court records, the Internet Archive, university archives (Stanford's Silicon Valley Archives in the Department of Special Collections, and the University of New Hampshire Franklin Pierce School of Law's IPMall), museum archives (the Computer History Museum and the Strong National Museum of Play), and trade and hobby magazines, and conducted original semi-structured interviews with industry lawyers, engineers, game designers, and senior corporate management from the organizations at stake. A word on web sources: videogame history is a field in which "'weekend historians' and Wikipedia pundits" rage, certainly a testament to the cultural importance of the medium.[18] What is problematic is that many of these often-inaccurate accounts get picked up by the myriad of journalistic or otherwise unscientific books that present "ultimate" or "complete" videogame histories, or the story of one particular game and company, then repeated circularly, each citing the other until hearsay and urban legends become "facts." I purposefully refrained from citing these works, which meant, at times, debunking urban legends and, at times, simply not being able to conclusively state what happened. Better to explain less than too much. As Atari game designer Mike Albaugh put it, "It is pretty much futile to depend on the 'collective wisdom' of the net. I just have to turn away from the BS and move on."[19] Several web-based sources stand out, however, either

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because they produced original oral histories or because of the quality of the cited and shared archival work that supports them, including AtariAge,[20] Michael Current's authoritative Atari History Timeline,[21] the Atari Compendium,[22] the Gaming History database,[23] the International Arcade Museum and Killer List of Videogames at the Museum of the Game,[24] the Golden Age Arcade Historian,[25] the Digital Antiquarian,[26] Benj Edwards Presents Vintage Computing and Gaming,[27] and MobyGames.[28] Finally, many hobbyists have collected a variety of legal documents and uploaded them on the Internet Archive, which is of tremendous help to the legal historian.

The first part of the book (chapters 2–7), which focuses on intellectual property (IP) cases and strategies, works through mostly the first twenty years of the industry, from the early seventies. I have chosen this time frame because this is when most of the legal principles still at play today were shaped. This leads us to the early nineties, thirty years back from now, which is removed enough to give the historian the necessary distance and perspective to pin and analyze inflection points. From a very practical standpoint, this time frame has an added benefit, unique to the legal history field. Because of attorney-client privilege, it is typically mission impossible to get practicing lawyers to speak on the record or share documents. This principle is essential for the protection of clients. But lawyers who practiced in the seventies and eighties tend to be retired. And many of the companies we'll observe no longer exist. And statutes of limitations have run. All of the above make it sometimes possible to obtain primary legal data from lawyers, data that would be unobtainable for a more recent history. But a follow-up study, starting with the 1998 Digital Millennium Copyright Act (DMCA) and covering the rise of online gaming, will be needed, and I hope this book will inspire other scholars to eventually venture into these more recent times.[29]

Other sections of the book do, however, bleed into more recent times. Issues related to the tension between freedom of speech and the perceived need to regulate game content, although they arose, as far as coin-op is concerned, in the 1930s with pinballs, and then picked up again in the late 1970s with the arcade moral panic, did not get settled by the US Supreme Court until 2011. Therefore, this story will take us into the second decade of the millennium. The same goes for international legal issues and their impact on gamers. I start this exploration with the establishment of Atari Taiwan in 1975. But although many questions arose in the first twenty years of the videogame industry, the exponential increase in global interdependence, coupled with the ease with which games started being distributed internationally

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with the rise of high-bandwidth global computer networks in the 2000s, and, later, with streaming services, make it worth venturing into the 2010s.

It is useful at this point to provide a quick overview (or refresher, for US readers) of the US judicial system, since most of the cases we discuss occurred in the US, where the industry originated. The US is a federation, meaning citizens are citizens of both the specific state where they reside (there are fifty states plus Washington, DC) and of the federal government. For this reason, there are two general court systems in the US: state courts and federal courts. Their jurisdictions frequently overlap, and how the venue for a trial is determined is complex and much beyond the scope of this book.[30] Each of these systems generally has three levels: the lower courts, the courts of appeals, and a high court generally called "supreme" court. Two of the states which courts we'll most frequently encounter are California (where the videogame industry emerged) and Illinois (historic home of the pinball industry). At the federal level, we start with district courts, where, typically, only one judge officiates. Then there are courts of appeals, where, usually, a three-judge panel hears the case; however, the opinion is normally penned by only one of these three judges. There are twelve geography-based court of appeals' "circuits," each of which is a separate territorial entity. In this book, we will frequently encounter the United States Court of Appeals for the Ninth Circuit, because its territory encompasses California. There is also a thirteenth circuit, which is not geography-based and instead has exclusive jurisdiction over certain legal fields such as patent law. It is called the US Court of Appeals for the Federal Circuit, shortened as "the Federal Circuit." It was created in 1982, so the early patent cases we'll discuss in chapter 2 were instead adjudicated in one of the twelve geographical circuits. Finally, the US Supreme Court sits on top of the pyramid. It has discretion as to whether to hear cases brought before it. When it does, it is said to "grant certiorari," and, when it doesn't, "certiorari is denied."

The remainder of the book is organized into nine chapters. Each chapter is a mini puzzle unto itself, which pieces together how an important legal issue came to be, was resolved, and influenced the industry and the experience of gamers in the flesh. They can be read in sequence or independently. Chapters 2, 4, and 6 show how the three branches of intellectual property—patents, copyrights, and trademarks—interact with each other and with other fields of the law such as contracts, corporate, antitrust, criminal, and international trade law, in a complex dance between technological innovation and legal innovation, a dance that is always in flux and, at times, surprisingly human-centered. Chapter 8 focuses on the tension between freedom

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of speech and the perceived political and social need to regulate the content of games. It will reveal why it was not until 2011 that videogames received full First Amendment protection from the US Supreme Court, by providing a legal history of content regulation and social sanitization, from pinballs and arcades to *Mortal Kombat* and first-person-shooter games. But this book is not exclusively US-centric. Chapter 9 reveals the legal, political, and cultural forces, invisible to the untrained eye, that explain why the gamer's experience is different in different countries and why, at times, decisions by a regulator or a company in one locale affects gamers globally.

One major challenge in writing this book has been the need to be thorough and accurate in the legal analysis, while distilling extremely complex cases in ways that are accessible to the non-legal-scholar educated public. The complexity is heightened in the chapters on intellectual property, where notions of law, electrical engineering, and computer science are mixed. One way to resolve this challenge has been to distill legal complexity through a historical narrative and the use of metaphors. Lawyers among the readers might at time pause and yell, "It's actually much more complicated than that!!" They will be right, but the point here is not to conclusively solve all legal complexity, but to *show* the complexity. Extensive endnotes are provided and point to relevant cases and law journal articles for readers who want to dig deeper into a particular topic.

These "conventional" chapters have been interspersed with much shorter chapters called "The Lawyer's Corner" and "The Engineer's Corner." One provides the reader with an opportunity to dive deep into a particular case: chapter 3 places you in the shoes of a law student writing a final exam focused on whether a particular Atari patent was valid. Another, chapter 5, is a crash course on computer science "for English majors," by which I mean anyone trained in the humanities or, generally, not in engineering. It provides the technical know-how to understand complex cases. At time, these "Corners," short and lightly footnoted, connect the previous chapters together by providing a conceptual meta-analysis. Chapter 7 reveals how strategic legal decisions in the realm of intellectual property are woven with business strategies and are heavily time, geo, and culture dependent. Finally, chapter 10 ties the book together by showing how the evolution of the videogame industry is not simply the result of legal and business conflict but, oftentimes, the product of a complex concomitant love-and-hate relationship between parties.

And now, game on!

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2 When Losing Is Winning: Atari, Magnavox, and a Tale of Two Patents

A Toy Fair Fiasco and a Pesky TV-Set Manufacturer

In 1975 and 1976, Atari suffered two major legal blows. The back-to-back events, on their face, put the newest darling of Silicon Valley at great risk. For although its growth curve in the previous three years had been described as "like the flight path of a SAM missile,"[1] or that of a "hockey stick,"[2] the start-up once dubbed the "fastest growing company in US history"[3] was strapped for cash and could not afford to lose trials to two established industrial companies much larger than itself. At the New York Toy Fair in February 1975, Atari introduced what would become its first consumer product and a smash hit, *Home Pong*. The game was protected by a patent previously secured by Atari's cofounder Nolan Bushnell, known as the *'483* patent. Unfortunately for Atari, and thanks to the company's notorious loose lips, competitors had not only found out about the game, but had already produced knockoffs—one of which was being presented at the booth next to Atari's by chip manufacturing powerhouse and one of Silicon Valley start-ups "original gangsters,"[4] National Semiconductor.[5] In a dramatic turn of events, Atari served National with its patent and a cease-and-desist order the next day, only to subsequently find out that Atari's patent attorney, a man who "wasn't all there,"[6] had grossly mishandled the registration of that key piece of intellectual property, making the patent that protected all of Atari's videogames unenforceable. This major blunder on the lawyer's part paved the way for competitors much larger and more powerful to knock off Atari's games with much greater economies of scale than Bushnell's start-up could ever leverage. In parallel to this discomfiture, Atari and a slew of other videogame manufacturers and distributors were being sued by television-set manufacturing

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giant Magnavox, over another patent, now commonly known as the *'507* patent. That patent, Magnavox alleged, was being infringed by Atari's *Pong* and the company's subsequent games. At that time Atari, while a media darling, was a classic bootstrapping operation, strapped for cash and just trying to survive, and a loss to Magnavox in court could have put the start-up out of business. After a two-year intrigue that spanned technology labs in Silicon Valley, factory executives in Indiana, lawyers and judges in Chicago and San Francisco, and corporate boardrooms in Manhattan, Atari ended up settling with Magnavox with explicitly and unequivocally stated prejudice, its head down and tail between its legs. Magnavox had won. Or so it seemed. In reality, these two very real legal blows, in combination, turned out to be a great victory, which significantly contributed to the rise and consolidation of Atari as the dominant videogames market player until the industry's 1983 crash. Why? And how? This chapter gives us a glimpse into the complexity of patent law and reveals the patent practice as a dynamic process that lives not just in law books and courtrooms but also as business strategies, at bars and industry fairs, through complex and dynamic business negotiations involving sometimes just businesspeople and engineers, and no lawyers. The practical impact of this complex interplay on the electronic games industry is often, as in the present case, surprising.

The *'483* Patent Debacle

Pong and the *'483* Patent

In 1972, a man "wearing a butterfly bowtie by the name of Nolan Bushnell walked in" the office of Hopkins, Jordan, Mitchell & Sullivan, a start-up general commercial law firm in San Jose, California, to incorporate the company that would become synonymous with the rise of videogames, Atari, Inc.[7] Bushnell had no money, so out of the five attorneys in the firm, including four partners, he was assigned the most junior, Lon Allan, a Stanford Law School graduate in his mid-twenties whose specialty "was doing whatever the four senior attorneys didn't want to do."[8] On June 27, 1972, Atari, Inc., was formally incorporated by Lon Allan with the California secretary of state.[9] While Bushnell was solidifying his legal position as a business entity by incorporating Atari, he also took care of securing his intellectual property rights. Bushnell had been doing business for a couple of years already through an unincorporated partnership named Syzygy, a DBA ("doing business as")

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later folded into Atari. Along with one Ted Dabney, he had developed an arcade game called *Computer Space* that, by then, had sold roughly 1,500 units.[10] *Computer Space* built on the plot and style of two existing computer games: *Spacewar!*, a mainframe-based shareware that spread like wildfire in university computer labs after its creation at the Massachusetts Institute of Technology (MIT), and *Galaxy Game*, which appeared as a coin-op unit at the Stanford student union.[11] All three involved intergalactic battles between spaceships equipped with missiles. The novelty of *Computer Space* was not its game plot but the fact that the game was built around a simple printed circuit board and did not require expensive computers driven by software, unlike its two predecessors. That specificity is what enabled production of the game on an industrial basis in a cost-effective way, at a time when computers were the preserve of universities and large corporations. It is what made it practical and efficient to run in beer parlors, pizza joints, and penny arcades.

At the core of *Computer Space* were what Bushnell simply described as "basic techniques for generating moving symbols on a display screen."[12] Whether these techniques were developed by Nolan Bushnell or Ted Dabney is the subject of much contention and of a feud that would last between the Atari founders until Dabney's death in 2018. Dabney claimed that the system was his invention, while Bushnell claimed it was his.[13] Regardless, it was Bushnell who would walk into a lawyer's office and arrange for a patent application to be filed to protect the technology, with himself as sole inventor. Because patents are so technical and their drafting requires both legal and engineering skills, patent applications are usually handled by specialized law firms, so Hopkins, Jordan, Mitchell & Sullivan, the firm that had incorporated Atari, could not handle the application,[14] and Bushnell turned to Flehr Hohbach Test Albritton & Herbert, a fancy San Francisco law firm located at 160 Sansome Street in the heart of the financial district, directly across from the Stock Exchange Tower.[15] Amid the pomp, Bushnell ran into the same issue as he had with his corporate lawyers: he was "such a low guy,"[16] a "lone engineer, so [the firm] gave him the lowest guy on the totem pole,"[17] "this guy Baylor [Riddell] who's a sweet man, but he had just recovered from brain surgery, so he wasn't all there."[18] On November 24, 1972, five months after Atari's incorporation, Riddell filed application number 309,268 with the US Department of Commerce's Patent Office, for an invention by one Nolan K. Bushnell, for an invention named the "Video Image Positioning Control System for Amusement Device." The patent was granted on February 19, 1974,

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under number 3,793,483 (hence the legal nickname of *'483* patent, the contraction of its full registration number, as is standard practice in patent law).[19] The division of labor between the two law firms would remain the same until Bushnell's departure from Atari in 1979, with Lon Allan of Hopkins, Jordan, Mitchell & Sullivan acting as general counsel for corporate and commercial matters,[20] and Flehr Hohbach Test Albritton & Herbert handling patent applications and litigation.

As described in the issued patent,

> This invention pertains to a video image control system for causing a video image to be displayed on a video display tube and to travel selectively in a plurality of directions on the tube. of the tuve. [sic] This invention is particularly useful in conjunction with entertainment devices of the kind wherein images are displayed on video tubes and controlled by an operator.
>
> Heretofore, various types of schemes have been arranged for controlling the position of images displayed on picture tubes for purposes of entertainment but many of these systems are typified by relatively expensive components and circuitry rendering the entire apparatus somewhat expensive and difficult to service as well as inflexible in adapting to different programs and displays.
>
> Accordingly, there is a substantial need for a relatively simplified video image control system with a high degree of flexibility and such is provided in accordance with the present invention herein.[21]

In other words, the invention "put the objects on the screen and move[d] them around."[22] As simple as it might sound to today's standards, the patent protected a "fundamental trick . . . how to make a spot appear on a TV screen like Pong without having to do a memory map, a frame buffer, like what you would do today, because there was no memory other than flip flops. And so it was a very, very, very clever trick,"[23] one that "Nolan thought covered basic videogames."[24] The trick is what enabled Bushnell and Dabney to fit a videogame on a simple printed circuit board, with no need for the expensive computers and complicated software previously required.

With the corporate and intellectual property legal-bureaucratic process out of the way, Bushnell could focus on the important thing: making and selling games. In June of 1972, the same month Bushnell and Dabney's Syzygy partnership morphed into Atari, Inc., Bushnell hired Allan (Al) Alcorn, a former University of California football player, hardware engineer, and product of the Free Speech Movement and Vietnam War protests, whose college job was "fixing televisions at a shop on University Avenue [in Berkeley] when [he] wasn't busy throwing tear gas canisters back at police" during these days of

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United States Patent [19]

Bushnell

[11] **3,793,483**

[45] **Feb. 19, 1974**

[54] **VIDEO IMAGE POSITIONING CONTROL SYSTEM FOR AMUSEMENT DEVICE**

[76] Inventor: **Nolan K. Bushnell,** 3572 Gibson, Santa Clara, Calif. 95051

[22] Filed: **Nov. 24, 1972**

[21] Appl. No.: **309,268**

[52] **U.S. Cl.**..... **178/69.5 TV,** 178/5.8 R, 178/7.3 R, 178/7.5 D, 178/69.5 TV, 340/324 AD

[51] **Int. Cl.**..... **H04n 3/22,** H04n 5/68

[58] **Field of Search**340/146 AE, 347 DA, 347 AD, 340/324 AD, 146.3 F, 168 R, 273, 324 A, 324 R; 273/DIG. 28; 178/6.8, DIG. 29, 5.8 R, 69.5 TV, 69.5 G, 6, 7.3 D, 7.3 S, 7.3 R

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Primary Examiner—Robert L. Richardson
Assistant Examiner—R. John Godfrey
Attorney, Agent, or Firm—Flehr, Hohback, Test, Albritton & Herbert

[57] **ABSTRACT**

For controlling the location of an image and to cause the image to move variously with respect to perpendicular coordinates, such as X, Y coordinates, on a video display tube, a first set of counters is arranged to generate artificial, horizontal and vertical sync pulses for use in conjunction with a video adder for controlling the image on a TV screen. A second set of counters driven from the same clock source as the first supplies information signals to the video adder for controlling the location at which the image will be displayed. Each of the two predetermined counters constituting the second set of counters is capable of being preset to any of a plurality of counts so as to cause a horizontal or vertical displacement of the image on the face of the display tube with respect to the locus defined by the count generated by the first set of counters.

5 Claims, 1 Drawing Figure

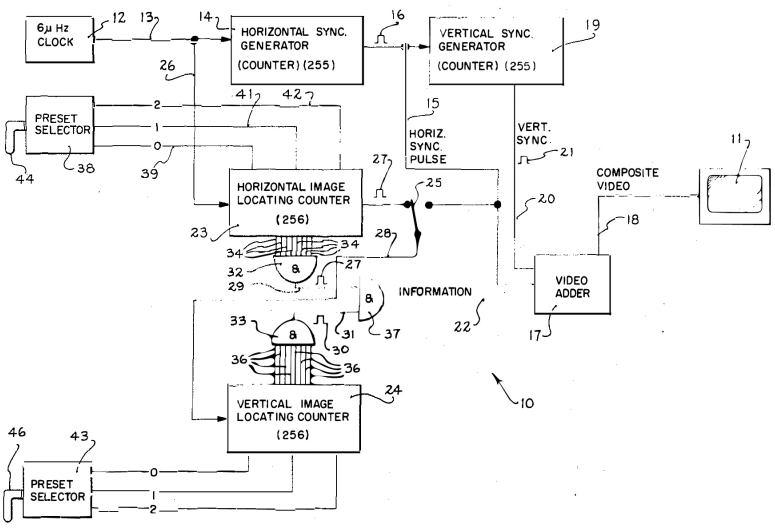

Figure 2.1

Nolan Bushnell's *'483* patent for a "Video Image Positioning Control System for Amusement Device," issued by the US Patent and Trademark Office on February 19, 1974. U.S. Patent No. 3,793,483 (filed November 24, 1972) (issued February 19, 1974).

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turmoil at the epicenter of student protests in the United States.[25] That September, they hired another UC Berkeley engineer, Steve Bristow, to complete the team. Atari's first success was *Pong*, a table-tennis type game designed by Alcorn. It was first tested in September 1972 at Andy Capp's Tavern on El Camino Real, "a bar in the working-class town of Sunnyvale, California, that had peanut shells on the floor and guys playing pinball in the back,"[26] a "dim, smoky" place "notable only for cheap beer and pinball machines."[27] Atari lore says that the bar owner called Al Alcorn within a week, to complain that the *Pong* machine was broken. Upon opening the unit to fix it, Alcorn realized that the coin box had overflown with quarters, which had jammed it.[28] This instant success was repeated when *Pong* rolled production units out of the door that December. It was reported that 7,000 units sold in the first six months,[29] 8,500 in total for 1973, "in addition to a substantial overseas trade."[30] The stuff of legend, *Pong* has been the subject of many a book and documentary and is widely credited for jump-starting the videogame industry.[31]

Pong, just like *Computer Space* before it, "embodied" the *'483* patent, a legal term of art used to explain that an invention protected by a patent is incorporated into a particular product.[32] The product, in turn, generally cannot be copied without paying royalties to the patent owner, or committing patent infringement, something actionable in federal court for civil damages. In this case, *Pong* incorporated Bushnell's invention to "put the objects on the screen and move them around."[33] In fact, it has been described as "an in-house exercise that Bushnell had thought would help Alcorn master the video-positioning trick" protected by the *'483* patent.[34] In theory, the game could not be copied without Atari's permission under a licensing agreement. But within six months of *Pong*'s introduction, there were already twenty different knockoff products "competing with Atari for patron's [sic] quarters in pubs, pizza parlors and other locations around the world," Bushnell told the *Wall Street Journal*.[35] Within twelve months, Atari estimated the number of illegal copies at 45,000, over six times the number of legitimate machines.[36] This was not surprising, considering the stories going around at the time of "lines outside the bars at nine in the morning—not to drink but to play what Alcorn sometimes called 'this stupid Pong game.'"[37] By the fall of 1973, videogames took in "four times as much as a good electromechanical game such as the pinball machine," Midway's sales director reported,[38] and *Business Week* marveled at "the astonishing ability of the videogame to

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lure quarters from the public . . . forcing major changes on the coin-operated game business," already a $3-billion-a-year industry.[39] Atari, *Business Week* noted, was "now up against the big boys in the games business."[40] To stay ahead of the competition, some of which had much stronger R&D, production, and distribution capacity than Atari, the start-up would have to constantly churn out new innovative games, as it did at the October 1973 Music Operators of America's show, where it "fought back with a four-player version of Pong called Pong Doubles, and a new game, Gotcha, in which one player's light blip chases that of his opponent through a constantly shifting maze."[41]

Create or Die: When Fun Becomes a Legal Weapon

The years between the incorporation of Atari in June 1972 and its purchase by Warner in the fall of 1976[42] would be the company's most creative. Atari has been referred to as the original "work hard, play hard" work environment, a place that "took to the next level the casual style of Silicon Valley startups."[43] The story of Atarians' antics has been told in greater detail elsewhere but is worth summarizing, for context, for the unsuspecting reader, because creativity and productivity substituted for what Atari did not have: a strong legal arm. Creativity and productivity were an explicit key part of Atari's intellectual property legal strategy, because oftentimes, creating innovative products is a more efficient way to battle unfair competition by intellectual property infringers than is lawyering up, as the reader will discover.

Creativity and productivity, in Atari's case, was fueled with what was, by today's standards, an outrageously debaucherous atmosphere. Work hard, play hard. Pot was everywhere. *Business Week*'s tamed description of Atari's manufacturing facility was of a place where "long-haired workers assemble components to the tune of piped-in rock music."[44] *Oui*, a racy men's magazine, described the assembly line as "the dressing room at Altamont: here a FUCK YOU T-shirt, there a stenciled MARIJUANA PICKERS LOCAL #13,"[45] a reference to the infamous 1969 music festival.[46] Many have attested that one could not see from one end of the old roller-skating rink, which Atari had turned into the arcade cabinet assembly line, to the other, for the weed smoke that hovered over it during working hours was so thick. Game designers and management "would routinely call 'MRB meetings' over the PA" during working hours.[47] "MRB" stood for Marijuana Review Board, creative work breaks courtesy of whomever had scored some cool new stash. Bushnell kept a kegerator stocked with ice-cold Coors Light beer in his office.[48] An

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engineer later turned patent lawyer recalls the head of marketing "in Speedos surrounded by a horde of beautiful women" hanging out in the corporate hot tub. Sometimes, people would skinny dip. In fact, the wild keggers and hot tub parties that would punctuate every Friday afternoon were such an integral part of the corporate culture that, when Bushnell was featured in the *San Francisco Chronicle* in 1976, the illustration photo had him pose in his hot tub "with a statuesque female friend."[49] Much more colorful depictions of life at Atari have appeared elsewhere, including in *Playboy*[50] and *Oui*,[51] revealing social and workplace standards much different from those of today. A crucial point here, however, is that corporate fun at Atari did not equal mindless hedonism and was, instead, a deliberate part of corporate strategy. "Work hard, play hard" starts with work hard. Looking beyond the grand tales of drug-fueled shenanigans, Bushnell recalls that "what everybody wanted was a party and some beer and some pizza, and they ended up going home with each other. . . . We were working hard and playing hard, and everybody was happy."[52]

The parties were also an integral team-building tool, in a company that valued employees as human beings. This was crucial in such a dynamic industry because non-compete agreements are generally not enforceable in California, unlike in most other states in the US at the time. So when the available legal tools do not allow management to indenture employees, alternative strategies must be deployed to retain them. A plant foreman recalls that "we had dope and rock music, management and labor were like this" (holding up two fingers).[53] When it came to creative talent, the most important part of the company, it was a crucial recruitment and retaining tool, in an industry and a state where the youngest and the brightest often casually bounced from one job to another, leaving their previous employer stranded overnight. In Nolan Bushnell's own words, "The best recruiting tool we could have for an engineer was to bring him over to one of our parties. They felt 'hey! I'm a nerd. There's girls here. They're talking to me. That's good!'"[54] In addition, the level of employee benefits was unheard of at the time, especially since it benefited all staff, regardless of status on the corporate ladder: a profit-sharing plan,[55] "baby bonus[es]" for Atari babies,[56] tuition remission for taking up to three classes in electronics at the local community college,[57] a half day off on one's birthday,[58] a credit system for lunch,[59] and a medical-insurance plan for staff as generous as the one for management,[60] including dental.[61] In one way, Atari almost sounded like it was being run like a commune, with the blessing

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of management. In its internal newsletter, *The Gospel According to St. Pong*, Bushnell actively sought input from employees. The latter were not shy about complaining, including about management's company cars: "Company expenses are especially hard to understand," Lee Coplea, supervisor for Final Assembly and T.V. Mod., told management in August 1973, "in light of the fact that the people working in Final Assembly are not really making enough money to exist in this world today." *The Gospel*'s "Why Don't We?" section published requests from as trivial as "Why don't we . . . Have more donuts? . . . Impeach Nixon???????? . . . Brush our teeth more often?"[62] to as serious and pragmatic as "Why don't we? . . . Have an article in the paper outlining . . . some of the benefits the company is planning? . . . Keep Atari's environment as pollution free as possible? . . . Put tampon dispensers in the ladies' rest rooms?,"[63] "Set up a lending library? . . . Vote on the ten-hour day, four days a week?"[64] In August 1973, an Atari Employee Council was set up, with power to prevent any firings "without the explicit consent of two-thirds of the council" and to decide on "company policies directly affecting the employee environment."[65] Nolan Bushnell, addressing his "brother Atarians,"[66] "attempt[ed] to define what [he wanted] Atari to be." In "The Atarian Philosophy," which ran in *The Gospel*'s August 8, 1973, issue, he highlighted the importance for the corporation to help fulfill basic needs of "maintenance of the spirit [more] than the body," including "the need to learn and progress" and "the need to be treated with dignity by his fellow man." He promised to fulfill these by, in addition to the practical aforementioned benefits, "treating all employees with love, dignity, and respect independent of job classification."[67] These hippie undertones are not surprising, given it was the early 1970s in the San Francisco Bay Area and the fact, as attorney Lon Allan put it, that "we were all a product of the Free Speech Movement at Berkeley, where the mantra of [movement leader] Mario Savio was you didn't listen to anybody over age thirty."[68]

But the communal aspects of Bushnell's style of management, just like the parties, did not exist for their own sake. At the heart of the Atarian philosophy's rhetoric is the company, work, and profit. When non-compete agreements are unenforceable, employee satisfaction becomes a substitute for legal weapons. Bushnell would later explicitly reflect on this. He recalled that Atari had a policy against sleeping overnight at the office, for security reasons. But the company had to change its policy under employee pressure, and in particular that of the future cofounders of Apple, then Atari employees:

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> Steve [Jobs] was insistent. He had to sleep at work. Otherwise, he would quit. His friend Steve Wozniak felt the same way. Our chief of security, however, was equally insistent that we should not allow it. But in the end we decided to permit overnight sleeping . . . because we wanted to create a comfortable environment for the Steves. Soon the Steves brought in futons and stored them under their desks so they could work until 3 a.m. and then catch five or six hours of sleep. . . . Our engineers loved their new freedom to stay up and work as long as they liked. . . . The productivity was out of this world.[69]

Back in 1973, the link between hard work and hard play was already explicit. The editorial of *The Gospel*'s second issue suggested that "if you glory in the 'difference of Atari' and if you personally determine that your company will always be cool, far-out, special and peculiar family of co-workers who love each other and their product, Atari and Atarians can take the world and make it a happy, fun place to be."[70] Bushnell made himself even clearer a month later, in the last two paragraphs of "The Atarian Philosophy":

> The main thing that we all must remember is pride in our work. Getting the maximum number of products out the door will give us the vehicle by which we can make this a fantastic corporation.
>
> We must, in the final analysis, make a profit in order to survive and grow, and that ultimately depends on each one of us doing our job to our best capacity.

What was not explicit was that the Atarian philosophy was also a substitute for lawyering up. The business pressure was on, and it was real, in part because of the legal ecosystem in which Atari evolved. As Alcorn told *Oui* in September 1974, "we've gotta come out with a new game each month just to cover ourselves, which means coming up with 15 new game ideas and developing maybe four." And, the magazine concluded, "the pace of the game is desperate. [Alcorn] has gray hairs."[71] By July 3, 1974, Atari had produced at least ten different original video coin-op games, all of which embodied the *'483* patent: *Pong*, and three *Pong* sequels (*Pong Doubles, Superpong, Quadrapong*); *Gotcha* and *Color Gotcha*, a maze game; *Space Race* and *Gran Trak 10*, race games; *Rebound*, a volleyball game; and *World Cup Football*, a soccer game released on time for the 1974 FIFA World Cup in Germany.[72] By July 11, 1975, games that embodied the *'483* patent also included *Elimination*, *Twin Racer*, *Spike It*, and *Formula K*, for a total of at least fourteen games embodying the invention.[73] Note that this list results from two sworn court testimonies of Nolan Bushnell but is not actually exhaustive. Bushnell's testimonies do not account for a myriad of *Pong* variations, such as *Doctor Pong* and *Puppy Pong*, a

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"child-appealing . . . cabinet with a cutout of a puppy's face peering over the roof,"[74] designed for pediatricians' offices, or *Pong in a Barrel*, a cocktail-table cabinet made out of a wine barrel.[75] They also do not account for localized version of games distributed abroad. For example, in France, a major market for Atari,[76] *World Cup* was distributed both as *Coupe du Monde* and *Coupe de France*.[77] (We discuss international distribution strategies in chapter 9.)

That pace was a matter of survival. First, the life span of coin-op games tends to be very short, so, to be successful over the long run, a game producer must constantly innovate. Second, Atari had neither the money nor the time to actually enforce its *'483* patent. The broader lesson here is that even a valid patent does not necessarily protect a company. Oftentimes, not enforcing one's existing intellectual property and focusing, instead, on staying first in rolling out new, better products is a far more efficient business and legal strategy (these points are put in comparative perspective and further developed in chapter 7). That said, where it was able to find a business partner willing to pay to acquire a white-label version of the games and redistribute them as a newly branded variation in a legally compliant fashion, Atari did also derive some revenue for licensing its *'483* patent.

Atari's First Licensing Deals

In the United States, the first licensees would be Nutting Associates, followed by mob-controlled pinball giant Bally/Midway, and, finally, America's retail behemoth Sears, a move that would propel *Pong* into US living rooms while, as collateral damage, making Atari realize that the *'483* patent was actually vitiated (a legal term of art meaning faulty and defective) and, therefore, unenforceable against the competition.

Nutting Associates A year before Atari's formal incorporation in June of 1972, Syzygy had already licensed *Computer Space* to Nutting Associates, Bushnell's previous employer. The game, according to Nolan Bushnell, had been "designed by me independently and offered to Nutting Associates on the royalty basis."[78] Although the application for the *'483* patent was not filed for over a year after the *Computer Space* game was licensed and first demonstrated to the public, the patent "represents the subject matter" of the *Computer Space* game. In other words, Bushnell's invention, that "video image control system for causing a video image to be displayed on a video display tube and to travel selectively in a plurality of directions on the tube,"[79] was

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first commercialized by Bushnell via its use in the *Computer Space* game, even though legal rights over the invention, in the form of a patent, had not been yet secured. This fact, which may appear trivial, has crucial legal implications, as we will soon discover. Under the contract as later described by Bushnell in court, Nutting obtained a right "to build that particular machine," *Computer Space*, making that company the first "licensee" of the invention that would come to be protected by the *'483* patent.[80]

Bally/Midway The next stop would be mob-controlled pinball giant Bally Manufacturing Corporation ("Bally") and its wholly owned subsidiary Midway Manufacturing Corporation ("Midway"). The setup of this contract is tricky to grasp because the legal personalities of Bushnell, Syzygy, and Atari, on one hand, and Bally and Midway, on the other, become commingled as various legal relationships morph into one, but this also demonstrates the flexibility of US business law and its adaptability to volatile business situations. The first step was a meeting at the Bally corporate office in Chicago on June 26, 1972, where Bushnell met with three Bally executives, VP John Britz, in-house legal counsel Bill Tomlinson, and chief engineer Joe Lally. On that day, Bushnell licensed to Bally two games he had yet to build, a pinball machine and "a video amusement game," to be delivered no later than December 31, 1972.[81] The contract was entered into by Bally and Nolan Bushnell in his own name, or, as the lawyers call it, *intuitu personae*, meaning that the personality of the individual is an essential reason why the other party enters into the contract, and that individual cannot be substituted by another in the performance of the agreement. In this case, what made Bushnell special was his capacity as "an engineer, knowledgeable in the amusement industry,"[82] and *Computer Space*'s "past performance," that is, its "success in the field" reported to Bally's executives by their distributors.[83] It is unclear why it is Bushnell, and not Atari, that entered into the contract, since Atari had been in existence for two weeks, and Bushnell was an integral part of Atari. Atari could easily have signed the contract with the express stipulation that one Mr. Bushnell would personally oversee the development of the games. Bally's VP John Britz later indicated in a court deposition that he had no knowledge of the existence of Atari at that time. Did Bushnell mean to pocket the Bally royalty agreement's money for himself and not share it with his partners in case their relationship went sour or Atari went bankrupt? In any event, Bally did receive the pinball

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machine, named *Fireball*, and ended up never marketing it.[84] As far as the videogame was concerned, by July 1972, Bushnell was contemplating designing a hockey-type game.[85] But, in the fall of 1972, he ended up instead demonstrating a mock-up of *Pong* to Britz in Lally's office at the Bally plant on Belmont Avenue in Chicago.[86] Bally did not accept *Pong* in fulfillment of the Bushnell contract, because Britz and Lally "couldn't see the merits of the game."[87] It also happened that "at that time Midway either had or was contemplating a tennis-type game."[88] *Pong* would therefore have been redundant with a game the Bally group was then seemingly confident it could develop in-house through its subsidiary. Bally did perform its part of the contract, by paying Bushnell $4,000, his advance against royalties for the two games, and the formal relationship between the two faded after that.[89]

The Atari/Midway relationship picked up where the Bushnell/Bally left off. In early 1973, Bushnell presented Bally with another game, code-named Syzygy Model VP-2. After internal discussions between Bally and Midway, William O'Donnell, president of Bally, decided that the Chicago-based group would accept Model VP-2 in fulfillment of the Bushnell/Bally contract, but that Midway would take over the relationship. This morphing of relationships was formalized on February 22, 1973, in a contract between Atari, Inc., implicitly taking over for Bushnell, and Midway Manufacturing Company explicitly taking over for Bally.[90] From a "pure" contract drafting standpoint, the 1973 agreement is a mess. It is signed by only half the parties, Midway and Atari, and by neither Bally nor Bushnell as an individual. The signatory for Midway, Henry Ross, is listed as the company's president, when he was in fact the secretary-treasurer, and it is therefore unclear that he actually had the formal authority to bind Midway.[91] The contract also sets forth that, for each licensed Model VP-2 unit, "MIDWAY shall pay ATARI in accordance with the previous agreement established between ATARI and BALLY and dated July 1, 1972."[92] For contract lawyers, this is textbook mess, because the aforementioned contract had not been signed between Atari and Bally but between Bushnell, as an individual, and Bally. It also was dated June 26, 1972, not July 1, 1972—July 1 was simply the date on which it was to take effect. But complex business negotiations are often messy. They often are completed after burning the midnight oil. At times, lawyers are on hand but make mistakes because of business pressure, time pressure, tiredness, or stress. At times, businesspeople do not want lawyers present to finalize legal documents because they do not want to take the risk that picky lawyers

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might derail a hard-fought business negotiation over details lawyers consider important but that seem trivial from a commercial standpoint. Contracts signed on disposable paper table covers at the end of business dinners tend to be messy both literally and abstractly. In any event, such formal shortcomings in business contracts are generally cured by the fulfillment of their obligations by the parties. In this case, Midway and Atari did take over the Bally/Bushnell relationship, which was fulfilled, as far as the "video amusement game" was concerned, with Syzygy Model VP-2, a "timed game where two players race upwards on a black and white screen avoiding one-scan line 'asteroids' flying from the left." Midway would manufacture the game as *Asteroids*, while Atari, for its own production, named it *Space Race*.[93] In addition, the Midway/Atari contract expanded the relationship, because, in that same February 22, 1973, contract, Midway ended up also licensing Syzygy Model VP-1, already known as . . . *Pong*. So much for in-house development of that "tennis-type game."[94] Midway would market the game as *Winner* and pay Atari $31 per unit produced.[95]

Unlike the Bushnell/Bally contract, the Atari/Midway agreement is explicit about the fact that Atari was not licensing to the Chicago firm just a game, but also all its underlying patents and patent applications, including, of course, the *'483* patent; the Bally contract had been executed in June 1972, six months before Bushnell filed for his patent in November 1972. By February 1973, however, the "Video Image Positioning Control System for Amusement Device" had itself become an asset as a patent application. Patent *applications* themselves can be licensed, and often are, because patents take so long to be issued by the US Patent and Trademark Office (USPTO) after the underlying applications are filed. They are licensed under the assumption that the patent will be granted at a later date, at which point the patent itself becomes licensed under the original contract. Bushnell, then, was careful to include the *'483* application in licensing agreements with third-party manufacturers such as Midway. He also explicitly limited the scope of the licenses granted to Midway: the patents could be used to manufacture only Models VP-1 and VP-2 (copies of *Pong* and *Space Race*, respectively), but not in the manufacture of any other game. In other words, if Midway were to create its own game concepts, and if such games were to embody the underlying Bushnell invention, then Midway would need a further licensing arrangement with Atari. Midway would indeed later license Atari's patents and patent applications in other games. For example, *Winner IV* was a licensed copy of *Pong Doubles*.[96]

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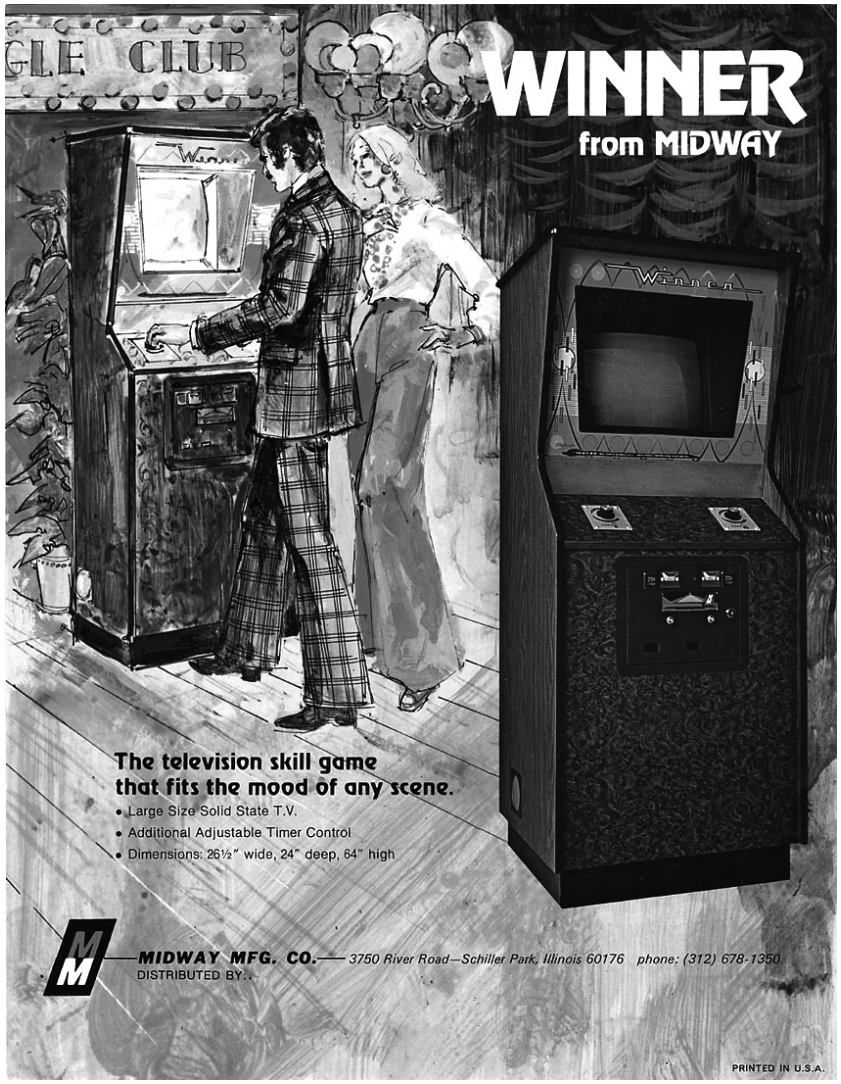
GLE CLUB
WINNER
from MIDWAY
The television skill game
that fits the mood of any scene.
• Large Size Solid State T.V.
• Additional Adjustable Timer Control
• Dimensions: 26½" wide, 24" deep, 64" high
MIDWAY MFG. CO. 3750 River Road—Schiller Park, Illinois 60176 phone: (312) 678-1350
DISTRIBUTED BY..
PRINTED IN U.S.A.

Figure 2.2
Midway's *Winner* was a licensed clone of *Pong*.

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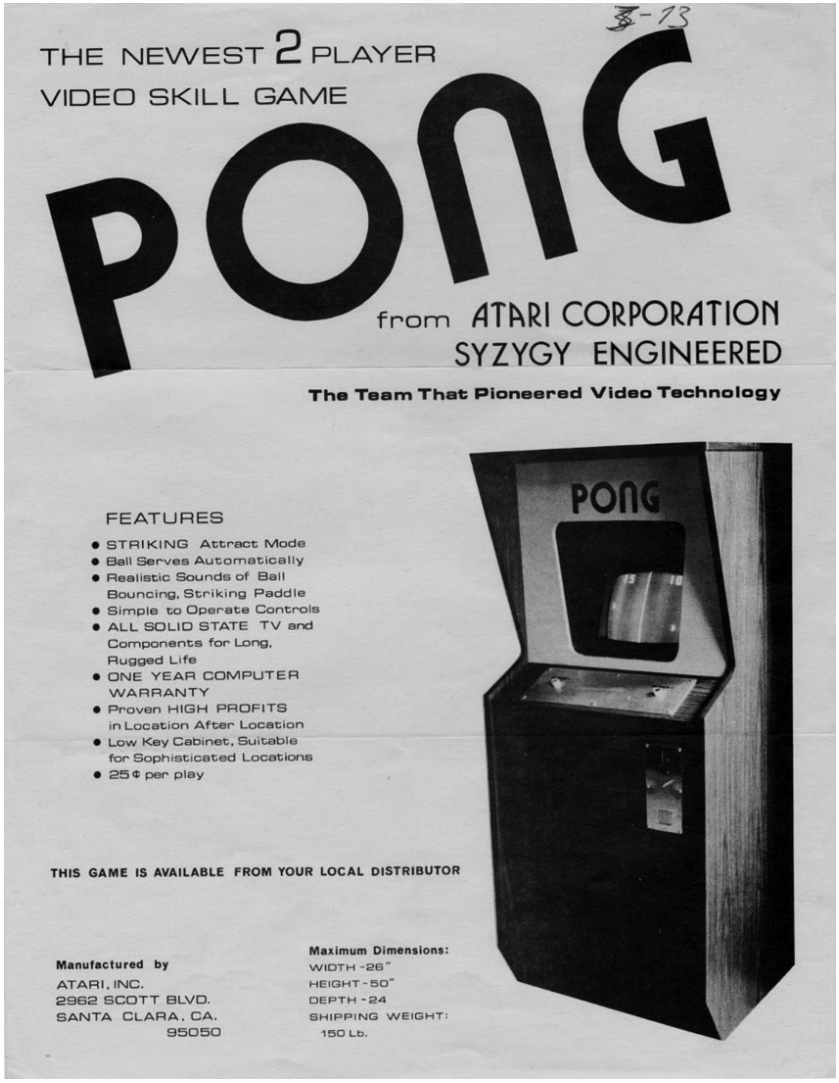

Figure 2.3
The original *Pong*.

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AGREEMENT

WHEREAS, ATARI, INC., a corporation having a principal place of business at 2962 Scott Blvd., Santa Clara, California, has developed certain innovative equipment primarily useful in the form of video amusement machines and devices;

WHEREAS, MIDWAY MANUFACTURING COMPANY of 3750 North River Rd., Schiller Park, Illinois, is in the business of manufacture and sale of amusement machines and devices; and

WHEREAS, MIDWAY and ATARI are desirous of working together and formalizing their relationship.

NOW, THEREFORE, AND NOTWITHSTANDING any prior agreement or understanding, it is agreed as follows:

1. For two years from the date noted below, ATARI shall disclose sufficient technology to MIDWAY to enable MIDWAY to manufacture, use or sell a complete amusement device or machine of the type and style now known as the Syzygy Model VP-1, (but not its associated trademark "Pong"), and shall license MIDWAY under any patent or application owned or controlled by ATARI with respect to such machine, hereinafter referred to as Licensed Unit.

2. For two years from the date noted below, ATARI shall further license MIDWAY under any patent or application owned or controlled by ATARI to make, use or sell that certain amusement device or machine of the type and style now known as the Syzygy Model VP-2, hereinafter referred to as Licensed Unit.

3. The licenses granted in paragraphs 1 and 2 above shall be limited solely to the aforementioned Licensed Units and shall not be employed in the manufacture, sale or use of any other machine by MIDWAY (or any other person or entity) without the express written consent of an officer of ATARI.

Dep. Ex. No. 2 Id.
Date: 6/25/74
Reporter:

Figure 2.4
First page of the February 22, 1973, licensing agreement between Atari and Midway, granting Midway a license to use Atari's patents and patent applications in the production of VP-1 (article 1), VP-2 (article 2), and prohibiting any other use by Midway of the Bushnell invention (article 3). Agreement between Atari, Inc., and Midway Mfg. Corp., February 22, 1973.

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A flurry of unlicensed knockoffs appear Of course, other than through one's own production, one can profit from their patent only if others are willing to pay to license the patent for incorporation of the invention into their own products, as was the case with Nutting, Bally, and Midway. Oftentimes, however, the incentive structure is such that many competitors make the decision to produce unlicensed knockoffs. Note that I am not using the all-too-common expression "fraudulent," or "illegal" copies in this context, only "unlicensed" knockoffs. In the United States, unlike copyright and trademark infringement, which in certain instances such as counterfeiting and piracy are criminalized, patent infringement is not a criminal offense. The only remedies for the victim of patent infringement are civil, chiefly, injunctions from a court to an infringer to stop infringing, and financial damages.[97] Potential copiers are therefore not presented with the negative incentive of going to jail for patent infringement. And inventors do not have the might of the Department of Justice on their side, unlike groups such as the Recording Industry Association of America, which resorts to criminal enforcement authorities to enforce the interests of private copyright holders.[98] With patent infringement, inventors are on their own when it comes to going after infringers. Patent lawsuits last for many years and require paying armies of lawyers and expert witnesses. Atari did not have the financial resources to do so. Add to that the fact that the start-up was too busy churning out new videogames to spend any time preparing for lawsuits. The result almost instantly became a flurry of unlicensed games using Bushnell's invention, to Atari's dismay. There was little the Silicon Valley start-up could do to stop it. Consider this heated exchange between Nolan Bushnell and a Magnavox attorney, one Mr. McGrane, who was clearly badgering Bushnell during a 1978 court deposition centered on the *'483* patent:

MR. McGRANE: Q. Do you have any opinion, Mr. Bushnell, as to whether or not the use of the device and the advertisement of the patented device by putting the number on the games that you made had any effect in preventing the copying by others of any Atari games?

THE WITNESS: A. You handed me a page a few minutes ago of five hundred copiers. You have the gall to ask me that question. . . . I don't believe that it had any significant effect on stopping anyone.

Q: Were there some Atari games that were not, in fact, copied by anyone?

A: Well, the bad ones. Ones that were not marketable.[99]

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Atari's public legal posture, meanwhile, was still a tough one. *Time* magazine, reporting on the heightened competition for quarters, noted that "this hunt for profits could wind up in court. Atari, whose *Pong* machines were the first to show up in penny arcades, has secured a patent on the electronic circuitry that makes the games possible. Its management contends that other manufacturers should therefore be paying Atari a royalty on each game they produce."[100] "People won't be able to copy our circuit boards again," Bushnell told *Business Week* in 1973.[101] But these were just empty threats. Until that fateful day at the New York City Toy Fair in February 1975.

Sears The next licensee of the *'483* patent would be Sears, Roebuck and Co., then the largest US general merchandise retailer,[102] for a home version of *Pong*. It was a fortuitous match that benefited both parties. On Atari's end, it was very difficult to find distributors for *Home Pong*, because Atari was one of the first consumer electronics companies in Silicon Valley, and, unlike coin-op, this nascent industry had no established distribution channels.[103] In fact, Sears itself did not want to distribute home videogames because the company was risk-averse.[104] But, at their Chicago headquarters, a visionary purchaser, Tom Quinn, had been wanting to mass-market the Magnavox Odyssey, a competing home videogame system, but had been hampered in its efforts by Magnavox itself. Magnavox was a dying US consumer electronic company: "They thought that they were in the business of selling these huge TV cabinets, at a time were consumers wanted to buy these new, small, black & white Sony TV sets," said Alcorn, a trend he had noticed while fixing televisions as his college job. It was "so sad," he says, that the big US manufacturers did not notice what the Japanese were doing.[105] In addition, Magnavox's CEO firmly believed that only by controlling the entire distribution chain directly could Magnavox control quality. As a result, the company owned that entire chain, from warehouses and trucks to storefronts. One could buy a Magnavox TV set only in a Magnavox store. This prevented the company from benefiting from the retail trends of the times, where consumers were increasingly buying from general department stores such as Sears. In addition, while their engineers created radically innovative products such as the Odyssey, video disks (with Philips), or home electronic pinball machines, rather than embracing the electronic revolution's disruptive abilities by pushing out these radical new products for their own sake, Magnavox's top executives saw these products simply as a way to support their core business, television cabinets.[106]

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Ralph Baer, who primed the technology behind the Odyssey (and whom we encounter later in this chapter), recalled meeting with Magnavox executives in October 1974 to try to convince them to enter the arcade videogame business. But when the executives saw the mock "very attractive" wooden arcade cabinets, they looked backward rather than forward. As they "visualized it, the product would be a game with a built-in, 17-inch color TV set that would be housed either in an armoire-type cabinet or one of the low floor consoles of their deluxe TV set line. No competitor of Magnavox had anything like that in their TV product lines. . . . The people at Magnavox were from the world of home TV receivers; the arcade business was not familiar territory. That naturally biased their judgment."[107]

This behemoth-like, backward-looking attitude is common, and many parallels can be drawn, for example, with AT&T missing the data networks revolution because it was in the "phone business," or Xerox missing on the personal and networked-computer revolution because it was in the business of paper copying.[108] So, back in the early seventies, Magnavox saw the Odyssey only as a killer app for its TV sets. It built the console within TV sets. And, as far as the stand-alone console was concerned, it at times claimed that the unit was only compatible with its own TV sets, which was a lie designed to force those who really wanted the console to buy a new Magnavox TV. And, the console was available only through Magnavox stores.[109] The Odyssey simply became a way to generate foot traffic for the Magnavox stores and for selling products that, at the time, were not what the consumer wanted anymore.[110] The Odyssey eventually became available at Sears, but only through its mail-order catalog, and relegated to the sporting goods section. As a machine that allowed one to play hockey, tennis, and football, albeit virtually, it found its spot in the 1974 *Sears Wish Book* Christmas catalog next to an advertisement for a table soccer game.[111]

The Sears purchaser, Tom Quinn, an innovator who understood the commercial importance of home videogames, was frustrated, or, as Alcorn puts it, "it was a pain for Tom selling the Odyssey."[112] That's when Atari, out of the blue, called Sears. What turned out to be godsent for Tom Quinn was also sheer luck for Atari. As Alcorn recalls, Atari simply cold-called the Sears main corporate line and asked to be patched to the department that purchased the Odysseys. The "receptionist saw that the Odyssey was purchased by Department 606, Sporting goods, so he patched us through Tom Quinn!"[113] "So when we called Tom and said that we had this better game than the

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TABLE TENNIS
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FOOTBALL
HOCKEY
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SUBMARINE
Play these 12 games . . electronic dot "players" race, spin, block, even ski on TV screen
HAUNTED HOUSE
ANALOGIC
CAT AND MOUSE
ROULETTE
STATES
SIMON SAYS
All the action takes place on your TV!
Twist remote control to maneuver your players on TV..
Each player can control his "player" vertically and horizontally. An action button starts the puck . . "English" control adds twist to "fake out" your opponent.
ODYSSEY™ Electronic Game
Includes a Master Control, two Player Controls, antenna-game switch, six printed circuit Game Cards, eleven Game Overlays and batteries
$99.95
The fast-paced action of hockey, the excitement of tennis and the strategy of football can all be duplicated in your own living room with the Odyssey™ by Magnavox. Attaches easily to any 18 to 25-inch (diagonal) black and white or color television set to create your own electronic playground.
To set the game up, attach the antenna-game switch to the antenna terminals of your TV set. Connect the two Player Controls to the Master Control and then plug the Master Control into the antenna-game switch with the 15-foot cord provided. To play electronic table tennis, turn on your TV to an unused station and insert a printed circuit Game Card into the battery-powered Master Control to activate two player lights and a ball (other games use designated Game Cards and plastic Game Overlays). Master Control lets you control the speed of the game, the Player Control lets you control the action. Plastic control units, two 5-foot Player Control cords, six "C" cell batteries, instructions/rules booklet. Television not included.
C6 N 25795C—Shipping weight 12 pounds $99.95
Opposition tries to pass, check, defend
Face off and aim for the goal . . shoot the puck past the defender and score
HOME
VISITOR
Lively 4½-inch tall "players" keep miniature soccer ball in action on this Table Soccer Game
$199.95
Capture the excitement of live soccer as you challenge your opponent to fast-action competition. Push, pull or twirl telescoping rods to maneuver your "players" to block, pass and kick the ball. Twenty-two plastic "players"—eleven on each team, compete on 27½x47½-inch field.
Pecan finish 1-inch thick plywood cabinet with furniture-style wood legs stands 33 inches high. Chrome-plated tubular steel rods have sure-grip rubber handles. Convenient end ball returns. Can be played by two or four players. Includes six balls, two score counters and owner's manual. Partially assembled with legs detached. From Italy.
6 N 25124N—Carton 50½x30¾x8 inches. Shpg. wt. 70 lbs. $199.95
SHIPPING NOTE FOR BOTH PAGES: items with an "N" suffix (as 6 N 25124N), see page 266.
P&KD Sears 409

Figure 2.5

The 1974 Sears Christmas catalog advertised the Odyssey alongside foosball tables. *Sears Christmas Book* (1974), 413.

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Introducing a new game from Sears
TELE-GAMES ELECTRONIC GAMES
Fast-paced games you play on your own TV
With Book value
"Pong" TV Table Tennis with all the action and sound you find in commercial games costing hundreds of dollars more
An outstanding low price . . only $98.95
Designed for Sears by Atari—one of the leading makers of electronic games
ACTION SPEEDS UP AUTOMATICALLY
BEEP
BEEP
SCORE SHOWS UP ELECTRONICALLY
YOU HEAR THE SOUND OF ACTION
RELIABLE SOLID-STATE CONTROLS
110-lb. Barbell-Dumbbell Set with interlocking plates
$22.88
100-lb. Barbell Set $18.88
Family Exercise Equipment
$17.95
$24.88
Dumbbell Sets
Ted Williams® Slant Board
55-lb. Barbell Set

Figure 2.6
Quinn's sporting goods department advertises *Pong* in the Sears 1975 Christmas catalog alongside fitness equipment. *Sears Christmas Book* (1975), 410, 419.

Magnavox Odyssey game, digital, on a chip, in a box, it's the real thing, Pong, he got the importance of it. He'd been—the happenstance, the luck, to find the one man in Sears that was crazy enough to do this."[114] Indeed, he concludes, Quinn was "the one guy who knew better than us how important that thing [*Home Pong*] was."

In addition, Sears "didn't try to screw us like the other guys did."[115] Sears would be very good to Atari indeed. While they insisted on being the exclusive distributor for *Home Pong*, they also offered Atari a line of credit through Sears Bank in order for Atari to be able to build the units that Sears was buying. "We needed equity to produce *Home Pong* because we had to pay in advance for all the components," Alcorn explains.[116] At the time, Atari could hardly get floated by banks, because the videogame industry was tainted by the links between the pinball industry and the mob, and the banks did not want to get openly involved in that business.[117] Shortly after entering the agreement to license *Home Pong* to Sears, the Sears Bank and Trust Company did indeed extend a line of credit through a Loan and Security Agreement dated

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August 1, 1975.[118] On March 17, 1975, the Sears, Roebuck and Co., represented by Thomas F. Quinn and C. E. Lind, entered into Contract of Purchase No. C061959 with Atari, Inc., for 75,000 units of the "'Pong' Electronic T.V. Game," at a price of $52.25 per unit, for a total value of $3,918,750.[119] The contract is often referred to as the "purchase order," or "PO." This is because, although it is legally an agreement negotiated between two parties, in reality, it is not negotiated on an equal footing. There is little, if any, actual legal bargaining. An indication of this power imbalance is that the agreement is a standard Sears form, with preprinted legal terms, and simply filled in on a typewriter to indicate basic specifics, such as the description of the product, quantity, and price. The document is issued by the controlling party with instructions to the generic "seller" to "PLEASE SIGN THIS COPY AND RETURN TO DEPARTMENT 606."

Lon Allan, Atari's general counsel, confirms this imbalance: "Nolan [Bushnell], Joe [Keenan, Atari's president], and Al [Alcorn] negotiated 'without benefit of counsel.' Sears gave us a PO [purchase order] and Atari signed it. I was not involved at all. Atari was in no financial position to bargain."[120] But giving exclusivity to a war machine like Sears is also risky business: "We realized that if we were only 'private labeling' for Sears, that we'd never be a truly successful company. . . . We realized that we had to create value in the Atari name, and as long as we were private labeled for Sears, as long as they were getting 100 percent of our production, they were controlling our fate. . . . They were controlling the price. We needed to sell under the Atari name and make the profits that the market afforded rather than the purchase price in a PO from Sears," Allan recalls.[121] Atari eventually did white-label *Home Pong* to Sears under the name Tele-Games *Pong*, while still managing to include an Atari logo on the on-off button.[122]

Before signing the PO in March 1975, Atari made a last attempt to find other distributors: "We said we did not want to be sole source to Sears," Alcorn recalls. "We'd heard stories about this. They're such a big retailer in those days that we wanted to have some other place to sell this thing. So we're going to take it to the New York Toy Fair in the January show and sell it. Open it up. And Tom [Quinn] tried to dissuade us from doing this. 'Trust us. We'll treat you right. We'll pay you. You really don't know what you're getting into.'"[123] In true Atari maverick fashion, they went anyway.

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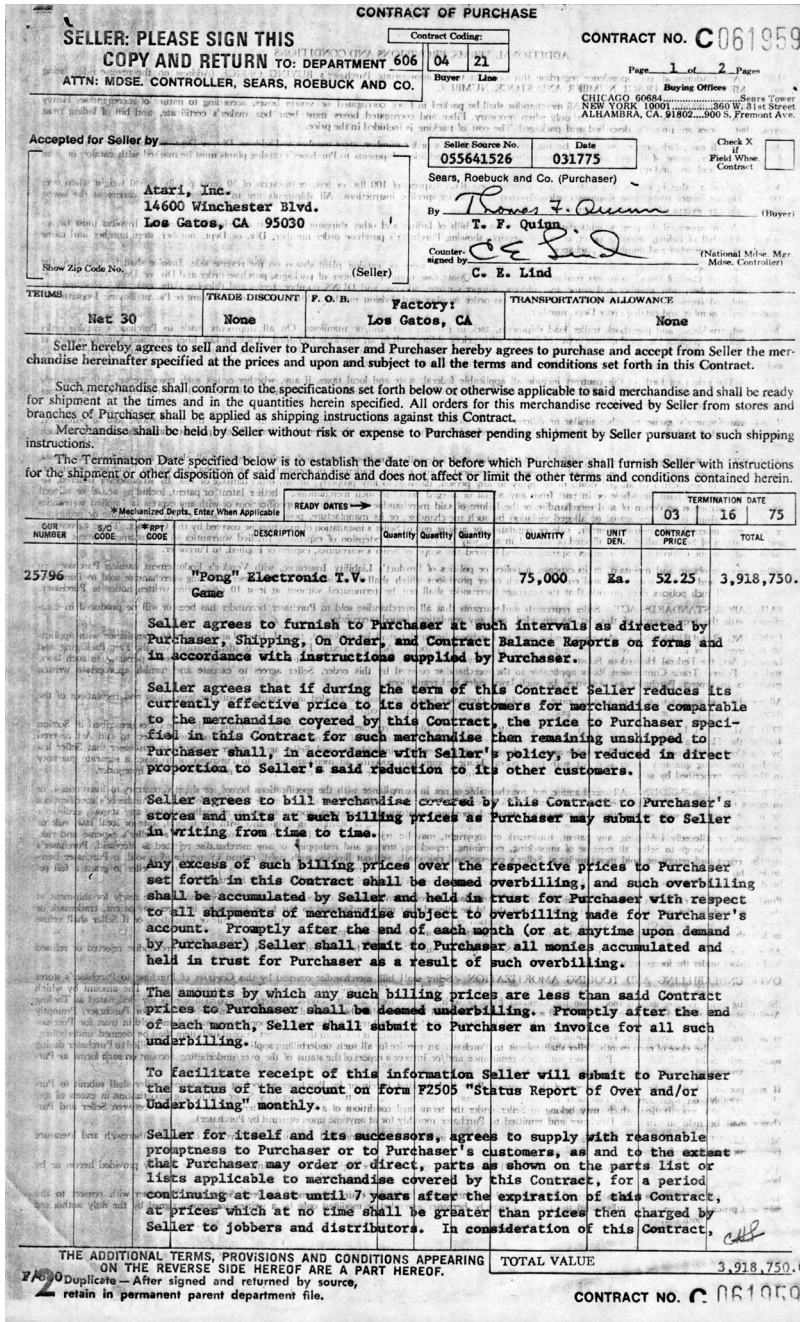

CONTRACT OF PURCHASE

SELLER: PLEASE SIGN THIS COPY AND RETURN TO: DEPARTMENT 606
ATTN: MDSE. CONTROLLER, SEARS, ROEBUCK AND CO.

Contract Coding: Buyer 04 Line 21

CONTRACT NO. C061959

Page 1 of 2 Pages

Buying Offices
CHICAGO 60684.....Sears Tower
NEW YORK 10001.....360 W. 31st Street
ALHAMBRA, CA. 91802.....900 S. Fremont Ave.

Accepted for Seller by

Seller Source No. 055641526 Date 031775

Check X if Field Whse. Contract

Sears, Roebuck and Co. (Purchaser)

By Thomas F. Quinn (Buyer)

Atari, Inc.
14600 Winchester Blvd.
Los Gatos, CA 95030

Show Zip Code No.

Counter-signed by C. E. Lind (National Mdse. Mgr. Mdse. Controller)

(Seller)

TERMS	TRADE DISCOUNT	F. O. B.	TRANSPORTATION ALLOWANCE
Net 30	None	Factory: Los Gatos, CA	None

Seller hereby agrees to sell and deliver to Purchaser and Purchaser hereby agrees to purchase and accept from Seller the merchandise hereinafter specified at the prices and upon and subject to all the terms and conditions set forth in this Contract.

Such merchandise shall conform to the specifications set forth below or otherwise applicable to said merchandise and shall be ready for shipment at the times and in the quantities herein specified. All orders for this merchandise received by Seller from stores and branches of Purchaser shall be applied as shipping instructions against this Contract.

Merchandise shall be held by Seller without risk or expense to Purchaser pending shipment by Seller pursuant to such shipping instructions.

The Termination Date specified below is to establish the date on or before which Purchaser shall furnish Seller with instructions for the shipment or other disposition of said merchandise and does not affect or limit the other terms and conditions contained herein.

* Mechanized Depts. Enter When Applicable

READY DATES →

TERMINATION DATE 03 16 75

OUR NUMBER	S/O CODE	*RPT CODE	DESCRIPTION	Quantity	Quantity	Quantity	QUANTITY	UNIT DEN.	CONTRACT PRICE	TOTAL
25796			"Pong" Electronic T.V. Game				75,000	Ea.	52.25	3,918,750.0

Seller agrees to furnish to Purchaser at such intervals as directed by Purchaser, Shipping, On Order, and Contract Balance Reports on forms and in accordance with instructions supplied by Purchaser.

Seller agrees that if during the term of this Contract Seller reduces its currently effective price to its other customers for merchandise comparable to the merchandise covered by this Contract, the price to Purchaser specified in this Contract for such merchandise then remaining unshipped to Purchaser shall, in accordance with Seller's policy, be reduced in direct proportion to Seller's said reduction to its other customers.

Seller agrees to bill merchandise covered by this Contract to Purchaser's stores and units at such billing prices as Purchaser may submit to Seller in writing from time to time.

Any excess of such billing prices over the respective prices to Purchaser set forth in this Contract shall be deemed overbilling, and such overbilling shall be accumulated by Seller and held in trust for Purchaser with respect to all shipments of merchandise subject to overbilling made for Purchaser's account. Promptly after the end of each month (or at anytime upon demand by Purchaser) Seller shall remit to Purchaser all monies accumulated and held in trust for Purchaser as a result of such overbilling.

The amounts by which any such billing prices are less than said Contract prices to Purchaser shall be deemed underbilling. Promptly after the end of each month, Seller shall submit to Purchaser an invoice for all such underbilling.

To facilitate receipt of this information Seller will submit to Purchaser the status of the account on form F2505 "Status Report of Over and/or Underbilling" monthly.

Seller for itself and its successors, agrees to supply with reasonable promptness to Purchaser or to Purchaser's customers, as and to the extent that Purchaser may order or direct, parts as shown on the parts list or lists applicable to merchandise covered by this Contract, for a period continuing at least until 7 years after the expiration of this Contract, at prices which at no time shall be greater than prices then charged by Seller to jobbers and distributors. In consideration of this Contract,

THE ADDITIONAL TERMS, PROVISIONS AND CONDITIONS APPEARING ON THE REVERSE SIDE HEREOF ARE A PART HEREOF.

TOTAL VALUE 3,918,750.0

F/A 20 Duplicate — After signed and returned by source, retain in permanent parent department file.

CONTRACT NO. C 061959

Figure 2.7

The Sears Purchase Order, signed by Tom Quinn, instructing Atari to sign and return to Department 606. Contract of Purchase between Sears Roebuck and Atari, Inc., Sears Contract no. C061959, March 17, 1975, Al Alcorn papers relating to the history of videogames, 1973–1974, Special Collections & University Archives, Stanford University. Courtesy of the Department of Special Collections, Stanford University Libraries.

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Figure 2.8
A white-labeled *Home Pong* unit manufactured by Atari for Sears' Tele-Games line, circa 1975. Evan-Amos, CC BY-SA 3.0, via Wikimedia Commons.

"Here, You Bastards!" (New York City Toy Fair, Waldorf Astoria, February 1975)

At the New York City Toy Fair, which ran from February 16 to 18, 1975, Atari's booth was located in the Jacob Javits Convention Hall in the basement of the Waldorf Astoria hotel. The booth immediately adjacent to Atari's was National Semiconductor's, the chip manufacturing giant. Atari, represented by Nolan Bushnell, Al Alcorn, President Joe Keenan, and VP of marketing Gene Lipkin, had gone to the show solely to offer *Home Pong* to potential buyers before committing to Sears.[124] To Atari's surprise, National was exhibiting—a *Home Pong* knockoff. To say that this rubbed Atari the wrong way is an understatement. It also raised a serious industrial and legal question: How could National have copied *Home Pong*, when the product was months away from its release by Sears, a distributor that hadn't even yet formally been signed by Atari?

The answer lay in Atari's notorious loose lips. The young corporation was unable to keep a secret. This was only one of many internal control problems:

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supply chain controls were nonexistent, and security was loose—boards and other electronic parts were constantly being stolen from warehouses.[125]

But, in this case, it was not even a matter of employee fraud. It was a matter of lack of control over trade and business secrets. Atari had needed a third party to manufacture the *Home Pong* chips, a "real semiconductor company," as Alcorn called it. So before settling for American Microsystems, Inc. (AMI), "we contacted everyone in the Valley. It was not a secret. We did not keep secrets."[126] In fact, Ralph Baer claims that he had "inside knowledge of an impending Atari home videogame system" as early as May 1974, when Magnavox ordered chips from Texas Instruments that would be used to compete with Atari's future product.[127] As far as National Semiconductor was concerned, "their attitude was, 'Hey, if it's a semiconductor, we can do some of these things better than Atari. Why shouldn't we do this?'"[128]

This was more than Atari was willing to take. Up until that point, threats by Bushnell to sue patent infringers had remained just threats, since Atari had neither the time nor the money to litigate and didn't see the point of doing it anyway. But this time, the affront was too great. Atari, says Alcorn, decided to oppose their patent for the first time "when we saw the attack on us by National trying to steal our business."[129] Joe Keenan phoned headquarters and had them overnight-FedEx him a certified copy of Bushnell's *'483* patent, the one that covered "the motion and sync circuitry applicable to computer videogames," and, the company insisted, "in effect, recognizes Atari as the originator of the videogame since this circuitry is essential for videogame operation."[130] The next morning, the Atari crew walked up to the National Semiconductor booth, so that Bushnell would physically present them with a copy of the patent. It must have been an impressive-looking crew, with Bushnell very tall, and Alcorn a former University of California football player. "And we presented them with the patent and we kind of said, 'Here, you bastards,' you know."[131] Now, most lawyers know that, oftentimes, the best way to litigate is to not litigate, because litigation is always a game with uncertain outcomes. What Alcorn calls a "Here, you bastards" is called in legal terms a cease-and-desist order, an explicit instruction to stop doing something, or else. Oftentimes, such a little bit of legal flexing is enough to achieve one's goals without actually litigating. And, as we know, Atari was in no financial position to actually litigate, especially against established corporations such as National Semiconductor and their armies of lawyers. But the flexing works only if there is something to flex. In this case, Atari's pumped

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biceps would quickly deflate. This had been the first time Atari had actually attempted to assert their patent in a pre-litigation kind of way.[132] It would be the last.

"Well Gee, Excuse Us, We're Sorry"

Atari quickly informed their patent law firm that they had served the *'483* patent on National Semiconductor. This is when Tom Herbert, the partner, hit them with the bad news: the patent was actually invalid. "Imagine our displeasure," Alcorn recalls, "and imagine the consternation on the part of the actual leader of the firm, when he said 'Nolan, we made a little mistake, and you're committing patent fraud, and you might go to jail for that!'"[133] Indeed, the patent had been "filed erroneously, badly, and the patent was not enforceable at all. In fact, much to the chagrin of the law firm, once we told them, well we gave National this patent, and they looked at it and they go, 'Oh we've got bad news for you Nolan. The patent's not valid, in fact, and if you assert it you could get in trouble for fraud.' 'Well you gave us the patent.' You know, like, Well gee, excuse us, we're sorry.'"[134]

To understand this grotesque situation, one must turn to some fundamentals of patent law. In order to be granted a US patent, an inventor must convince the patent examiner working for the USPTO that the claimed invention has certain qualities: it is novel, nonobvious, and useful. These three qualities are, of course, terms of art that embody complicated statutory provisions and a wealth of case law. In addition to proving these three qualities, the inventor must meet a number of disclosure requirements, all of which must be crafted by skilled patent lawyers—if the disclosure requirements are not precisely met, the patent application is (or should be) rejected.[135] Finally, a myriad of procedural roadblocks along the way can trip the application and cause it to be rejected. And, even when a patent is granted, it can always be invalidated after the fact through litigation. Patent law is a tedious field that calls for a precise understanding of both the law and engineering. In its simplest form, a law school patent-law treatise giving a broad overview of these principles is more than 700 pages long.[136] The chapter that follows, "The Lawyer's Corner: Ready Law Student One," takes you, the reader, through the complexity of patent law, by making you a law student for a day and walking you through the detailed steps of analyzing the validity, or lack thereof, of the *'483* patent, as if you were preparing to decide whether or not to litigate it.[137] In the

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interest of fluidity for the present narrative, we now present a simplified overview of why the *'483* patent was most likely invalid. Note that I use various "shades of likelihood" throughout this chapter and the next because we will never know for sure whether the patent would have been invalidated, since it was never actually litigated. On paper, it therefore remained technically valid for seventeen years after it was issued, until it expired on February 19, 1991.

Nolan Bushnell's *'483* patent had been granted. On its face, it was presumed to be valid.[138] What Atari's lawyers realized after the fact, however, is that an inherent flaw had been overlooked, by both the lawyers and the USPTO, that would vitiate the patent. That flaw had to do with the statutory requirement that the invention be "novel."[139] In contrast, if "the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States," then the invention cannot be patented.[140] If these events are discovered after the patent is issued, then it can be invalidated through litigation.

In the present case, the *'483* patent was most likely going to be invalidated by the courts, had Atari sued National Semiconductor, because more than one year prior to the date of the application, it already had been in public use and on sale, facts that National Semiconductor could have proven and used as a defense to a patent infringement claim by Atari. First, Nolan Bushnell testified in court that "the first time at which [he] had an apparatus completed on which you could play any version of *Computer Space*" was "probably April or May of '71."[141] Bushnell most likely placed the first unit at a bar near Stanford University named the Dutch Goose sometimes during the summer of 1971. He would recall in a 2011 speech delivered at Google that "it did well! Lots of Stanford kids. False positives!" (the "false positives" refer to the fact that the game overall did poorly on the broader market because it was too complicated, something that at the time of testing had not fazed the Stanford geeks).[142] Second, four units were displayed and made available for public use in October 1971 at the Music Operators of America (MOA) show in Chicago, where Bushnell, a former carnival barker, aggressively encouraged attendees to try out the game: "You couldn't miss this big, yellow machine with the TV tube. And you couldn't miss Nolan. . . . He was the most excited person I've ever seen over the age of six talking about his game. He was so hot about it, I remember backing up, trying to get on my way to see the other booths, and he was still talking!," a trade journalist later recalled.[143] Clearly,

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the unit has been in *public use*. The game was also *on sale* at the MOA show, which was a trade show where game manufacturers demonstrated their product not just for their own sake but also to take orders or preorders.

The filing date of the *'483* application had been November 24, 1972. Since all the aforementioned events occurred before November 24, 1971—that is, more than one year prior to the filing of the application—the patent was most likely vitiated. At this point, the lawyers among the readers will object that this quick and simplified analysis is, well, quick and simplified. They will be right. In fact, as a leading patent law treatise points out, the statutory provisions regarding public use, on sale, and described in a printed publication, while "deceptively straightforward at first reading . . . may seem a rather bewildering Pandora's box of arcane conventions and obscure terms of art."[144] In fact, "much controversy and disagreement surrounds the meaning of" some of its provisions, and lawyers must look to "extensive case law on the subject."[145] This is what chapter 3 will do, taking the readers willing to immerse themselves into the complexity of patent law on a walk through these obscure terms of arts and case law as they apply to the present case. Chapter 3 can also be skipped entirely if you do not feel like "playing law student." At the end of the day, Bushnell's patent would most likely have been declared invalid by a court of law, had Atari sued National Semiconductor. Atari's executives had the sense not to do so.

In defense of Baylor Riddell, the lawyer who had handled the application, what Atari was doing was "leading edge technology. It was hard to find a patent attorney who had the technical chops to understand what they were patenting. Certainly, Baylor Riddell didn't understand," Al Alcorn would later say, magnanimously.[146] Irrespective of the complication, assuming Riddell knew the game had been placed in a bar, presented at the MOA show, and described in *Cash Box* before November 24, 1971, then the tardy filing was a beginner's mistake. *Assuming*, of course, that Bushnell actually had disclosed the existence of all of these events to Riddell. A tricky part of the legal practice is that clients oftentimes purposefully misrepresent situations to, or conceal facts from, their attorneys. And when the client is working in concert with their lawyer, it is the role of the counsel to ask the right questions. Engineers are not lawyers. They pay lawyers precisely because they do not know the finer points of statutes such as the one at stake governing the novel character of inventions. In this case, it was Baylor Riddell's responsibility to ask Bushnell, "Nolan, did you sell any units of *Computer Space* prior to November 24,

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1971? Did you place ads for it? Did you display the game at a trade show? Did you test it at a bar? Was it described in a trade magazine?" Alcorn suggests that "Nolan told Baylor when the first publication was. Although it was over a year, and therefore now in the public domain, Baylor said that it was still valid."[147] Now, both Baylor Riddell and his boss Tom Herbert have long passed away and were therefore not available to present their version of the story for this book, and there is no need for the historian to point fingers. What is certain is that this was a major legal blow.

On its face, this legal blow was a major business train wreck, one that could have killed Atari on the spot. *Pong* "was a classic bootstrapping operation: the high gross margin allowed Atari to self-finance its growth."[148] The reason Atari had had to bootstrap its growth, from 1972 to 1976 when it sold to Warner, is twofold. First, coin-op videogames were associated with pinballs, and pinballs were associated with the mob. As a result, both venture capitalists and banks wanted little to do with the nascent videogame industry.[149] And second, the *home* videogame industry wasn't an industry to begin with until Atari made it one.[150] This situation is not so different than the one Apple was in when it was looking for financing for its first personal computer: Why would anyone loan money to a start-up to create a product that does not yet exist, as part of an industry that does not yet exist?[151] Early on, Atari was able to secure a $50,000 line of credit from Wells Fargo. And, as far as venture capitalists were concerned, in the case of both Atari and Apple, it took a visionary, Don Valentine, to provide any significant initial capital. In the case of Atari, Valentine agreed to put in $600,000 in June of 1975 (Valentine's Sequoia Capital, along with Time Life, Mayfield II, and Fidelity, closed the first and only round of Atari venture capital financing of roughly $2.1 million by the end of that year).[152] As Bushnell would reflect a year later, speaking of *Home Pong*, "it takes a lot of cash to build a $20 million inventory [75,000 units of Sears' Tele-Games *Pong*] for a three-month [Christmas] selling season. . . . Growing the company without money was hard."[153] What this meant, practically, was that, to survive, Atari had to scale up its operation—that is, produce a large number of units in order to be sustainable despite low margins on each unit. But one cannot scale up when facing cutthroat competition from a large number of much bigger players who can undercut smaller competitors like Atari. Enforcing its patent would have enabled Atari to preclude competition and get a monopoly on a market not big enough to scale production in a multiplayer environment.[154] Unfortunately, the Toy

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Fair debacle prevented just that from happening. From then on, anyone could simply knock off *Pong* (and every other Atari game, for that matter). It would be the David versus Goliaths of videogames. All on its own, with no cash, and with no way to prevent knockoffs thanks to this first legal blow, Atari was most certain to fail. Strangely, one thing that would save Atari was another legal blow, inflicted, this time, by Magnavox.[155]

The Big Boys Come after Atari

On April 15, 1974, Magnavox sued Atari as well as Bally Manufacturing Corporation, Chicago Dynamic Industries, Allied Leisure Industries, and Empire Distributing, for patent infringement. On September 22, 1975, shortly after Sears, Roebuck and Co. had started distributing Tele-Games *Pong*, Magnavox added Sears to the list of defendants. Magnavox had been selling its Odyssey console since 1972. At the heart of the Odyssey was a series of patents protecting inventions by Ralph Baer and Bill Rusch, two engineers working for Sanders Associates, a defense contractor manufacturing electronic systems. One, the *'480* patent, developed by Baer between 1966 and 1967, would later be ruled by the courts to be "the pioneer patent" in "the art of playing games on a small scale, with the players participating in the game in an environment such as a home or someplace where a large computer would clearly not be available."[156] The other patent, the *'507*, developed by Rusch in 1967 and filed for first in 1969 and in its final form in 1974, "discloses a movable hitting spot which is controlled by the player and which, by striking a hit spot, can change the direction of that hit spot."[157] Taken together, and described in a nontechnical way by Ralph Baer, the patents covered "games that had symbology in which there was interaction between machine controlled and manually controlled spots on the screen, symbols on the screen."[158]

While Baer and Rusch were credited as the inventors, their employer, Sanders, actually owned the patents. Sanders, however, was a military contractor and was not in the business of producing cheap consumer electronics, and much less of marketing entertainment devices. So Sanders, led by Baer and corporate patent attorney Lou Etlinger, licensed the patents to Magnavox, so that the television-set giant would turn the inventions into a consumer product, eventually finalized and commercialized as the Odyssey. Under the terms of the license, 5 percent of sales of products that embodied the patent (whether sold by Magnavox or sublicensees) would be considered a royalty

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340-709 SR

XR RE 28,507

United S E Re. 28,507

Rusch [45] Reissued Aug. 5, 1975

[54] TELEVISION GAMING APPARATUS

[75] Inventor: William T. Rusch, Hollis, N.H.

[73] Assignee: Sanders Associates, Inc., South Nashua, N.H.

[22] Filed: Apr. 25, 1974

[21] Appl. No.: 464,256

Related U.S. Patent Documents

Reissue of:

[64] Patent No.: 3,659,284
Issued: Apr. 25, 1972
Appl. No.: 828,154
Filed: May 27, 1969

[52] U.S. Cl. ..... 340/324 AD; 178/6.8; 273/85 R; 315/377

[51] Int. Cl.[2] G08B 5/36

[58] Field of Search ..... 340/324 AD; 315/377

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Primary Examiner—David L. Trafton
Attorney, Agent, or Firm—Louis Etlinger; Richard I. Seligman

[57] ABSTRACT

Apparatus and methods are herein disclosed for use in conjunction with standard monochrome and color television receivers, for the generation, display and manipulation of symbols or geometric figures upon the screen of the television receivers for the purpose of playing games. The invention comprises in one embodiment a control unit, connecting means and in some applications a television screen overlay mask utilized in conjunction with a standard television receiver. The control unit includes the control means, switches and electronic circuitry for the generation, manipulation and control of video signals which are to be displayed on the television screen. The symbols are generated by developing current pulses proportional to predetermined portions (slices) of horizontal and vertical sawtooth waves. The connecting means couples the video signals to the receiver antenna terminals thereby using existing electronic circuits within the receiver to process and display the signals. An overlay mask which may be removably attached to the television screen may determine the nature of the game to be played. Control units may be provided for each of the participants. Alternatively, games may be carried out in conjunction with background and other pictorial information originated in the television receiver by commercial TV, closed-circuit TV or a CATV station.

64 Claims, 35 Drawing Figures

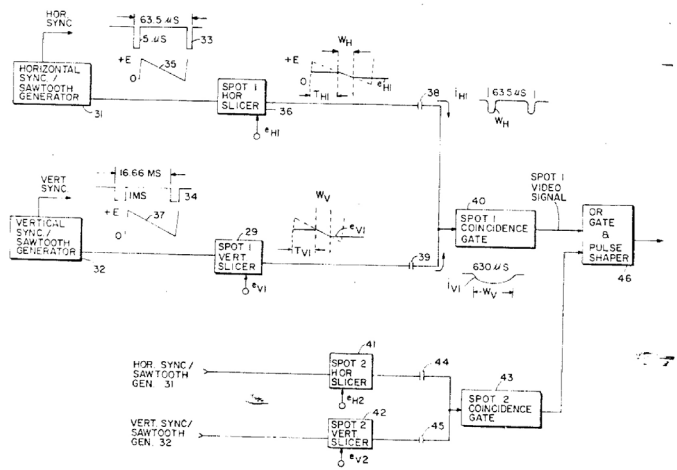

Figure 2.9

Bill Rusch's *'507* patent for a Television Gaming Apparatus, sarcastically dubbed by courts the "oft-litigated '507 patent." U.S. Patent No. Re. 28,507 (filed May 27, 1969, issued April 25, 1972, as no. 3,659,284) (reissue application filed April 25, 1974, reissued August 5, 1975). The quote is from Nintendo of Am., Inc. v. Magnavox Co., 659 F. Supp. 894, 897 (S.D.N.Y. 1987).

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for the patents, and these royalties would be split fifty-fifty between Sanders and Magnavox. And any income from legal action against patent infringers would also be split fifty-fifty.[159] Magnavox would be in charge of suing infringers on behalf of the pair.[160] This is important because the income from legal actions would turn out to be much more profitable than the royalties for sales made by Magnavox. The Odyssey was not a commercial success. By the time it came out on the market in 1972, the technology, which Sanders had developed between 1967 and 1969, was already dated.[161] And Magnavox's strategy of using the Odyssey not as a stand-alone product but as a killer app to incite the purchase of Magnavox TV sets that nobody wanted hindered the console. But the description of the patent was so broad that Magnavox realized that they had a shot at recovering damages for patent infringement for any game made by unlicensed manufacturers where a machine-controlled spot interacted with a player-controlled spot, such as a ping-pong game: "In a ping-pong game, the manually-controlled spot is the paddle. The machine controlled spot is the ball. If the ball hits the paddle, is coincident with the paddle, it does something like bounce off in a different direction. Bingo. That's what our claims covered," Baer summarized. "By 1975, [Magnavox] had awakened to the fact that maybe there was enough business out there which infringed our patents, which had issued by that time that it made sense to go after these people." In other words, Magnavox became one of these original patent predators, those companies that monetize their intellectual property not by producing useful iterations of the underlying inventions but rather by holding onto a portfolio of patents and suing anyone who comes remotely close to potentially infringing on these patents, even though the patent holder is not itself using the invention in actual products. The former is useful to society, the latter hinders innovation. Magnavox ended up doing just that, crushing in court or forcing into settlement or licensing agreements more than sixty videogame manufacturers who were producing systems vastly superior to the Odyssey, including Atari, Mattel, Activision, and Nintendo, and collecting more than $100 million in damages along the way.[162]

But in 1975, no ruling had yet been issued, and Magnavox's claims could well have been rejected by the courts. An in-depth legal analysis of the cases that would be ruled upon for the subsequent twenty-four years is beyond the scope of this book—suffice it to say that there were good arguments against the validity of the Sanders patents. In particular, just like with the *'483*, there

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was a question of whether Rusch's invention was "novel." In this particular case, the *'507* might have been invalidated because of the existence of "prior art," that is, a similar invention produced by someone else before the application. A significant legal controversy in the Magnavox story is that the courts ended up considering that the videogame *Spacewar!*, created by computer hackers at MIT in 1962 and widely shared in university computer labs around the nation, was not "prior art" in a legal sense. But, to the engineer, it certainly seemed like it. To this day, Alcorn stands behind his analysis that the Odyssey had been anticipated by the prior art of *Spacewar!*: "Both featured moving objects hitting a stationary object and reflecting off of it,"[163] and "similar games [to the Odyssey's] were already on the PDPs," the computers used at universities, before Magnavox released its product.[164] The courts, also very controversially, ended up expanding the reach of the *'507* to cover competing technologies that had little to do with the original invention, as we will discuss later.

But in 1975, with no die being cast yet, it was reasonable for Atari and the other parties being sued by Magnavox to assume that they had a strong shot at prevailing in court. Atari, in particular, had always made clear that it considered that its *'483* patent (the Bushnell patent) and the Sanders patents were two distinct sets of inventions with no overlap. "They had their patents, we had ours," is how Alcorn characterized the situation.[165] And the industry itself generally seemed to acknowledge Bushnell as holding the dominant patent: as *Cash Box* reported in 1975, "Atari holds U.S. Patent No. 3,793,483 covering the motion and sync circuitry applicable to computer videogames. The patent, in effect, recognizes Atari as the originator of the videogame since this circuitry is essential for videogame operation."[166] In May of 1976, with the procedural motions still under way, meaning that the substance of the case had not yet been heard, Atari's lawyers described their position as follows: "Based upon our review of the evidence thus far developed it is our opinion that the Magnavox and Sanders patents in suit are invalid. . . . It is our opinion that this litigation will end favorably to Atari and will hold that the Magnavox and Sanders patents and invalid and unenforceable."[167] Atari's lawyers wrote this legal opinion upon request of Arthur Young & Co., the auditors for Warner, as part of the due diligence conducted by Warner on Atari in the context of the then-potential purchase of Atari. This is significant because lawyers tend to be particularly cautious with wording when penning such legal opinions, because they can be sued by purchasers if things

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backfire. It therefore indicates that they felt strongly that the Magnavox suit, if litigated, would end favorably for Atari. And Atari's public position, as reported by the *Wall Street Journal*, was that "it believes its games and Magnavox's game operate on two different principles."[168]

There is also evidence that Bushnell had discussed the Magnavox position with Sears, Seeburg, Allied Leisure, and Bally/Midway, and had even offered the latter to defend any patent infringement suit that would be brought by Magnavox against Bally by virtue of Bally licensing potentially infringing Atari products.[169] In practice, Atari also agreed to defend Sears, as distributor of *Home Pong*, on its own dime, and indemnify them if litigation took a turn for the worse.[170] So it is clear that both Atari's executives and their legal team felt strongly that they would prevail against Magnavox in court. But lawyers are expensive. By June 1976, Flehr Hohbach had already charged Atari over $113,000 just to handle procedural matters pertaining to defending Atari and Sears.[171] And no matter the assurances delivered by Flehr Hohbach, every lawyer knows that litigation never has a guaranteed outcome. Even a case that is bulletproof on paper can be lost: to a naïve jury, a confused judge, an unethical expert testimony, a procedural error, or a brilliant plea by the opposite counsel. We return to this theme in chapter 7.

Things are particularly volatile in the field of patents. Patents are highly technical matters, from an *engineering* standpoint. But their validity is being ruled upon by *jurists* who might not be versed in the finer points of, in the case of videogames, electrical engineering and computer science. Atari had two other incentives not to litigate. First, when the lawsuit started, the company was in the midst of negotiating an acquisition from Warner. Being strapped for cash and unable to develop its operations further without the influx of fresh capital from the entertainment-industry giant, Atari could not afford to have the deal derailed. Pending litigations often push mergers and acquisitions (M&A) deals off track, because of the uncertainty attached to them and the fact that they make valuation very difficult. If a company worth $10 million has a lawsuit pending against it that threatens to hold it liable for $8 million, that company is potentially worth $2 million, not $10 million. This usually either drives potential buyers away or drastically lowers the purchase price. With the Magnavox lawsuit out of the way, Atari would be in a much stronger position to negotiate a good price with its potential buyer, Warner. Second, the Atari executives no longer trusted their lawyers after the February 1975 Toy Fair fiasco. It is also apparent that Bushnell did

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not care much for lawyers in general—at best, they came in the way of his creative energy, which he had plenty of, but only so much time to implement his business ideas. When asked, in an unrelated litigation, whether, in 1973, he was concerned that his *'483* patent might be vitiated, he responded, "I wasn't thinking about anything but trying to build as many Pong games as I could."[172]

Atari Settles—without the Help of Lawyers

In the end, Bushnell decided to settle with Magnavox. Settlements are typically negotiated with lawyers on all sides—this would certainly be the case for Magnavox, represented by their in-house corporate patent counsel, Thomas Briody.[173] Bushnell, on the other hand, decided to opt for another tactic, which Lon Allan calls "kicking the lawyers out of the room." In an unusual fashion, Bushnell went to meet Magnavox's executives and lawyers on his own.[174] "What used to drive Tom Herbert at Flehr Hohbach crazy," Allan recalls, "is, in some of these deals, Nolan would get impatient—he'd say to the other side, 'Okay, I'm going to kick Flehr Hohbach out of the room. You kick your lawyers out of the room'—and Flehr Hohbach would go crazy. For example . . . Nolan did kick the lawyers out of the room to negotiate the [Magnavox] settlement. I heard that from Nolan himself. Indeed, he was proud of it."[175] It was not the first time Bushnell had negotiated a key contract on his own. It had already been the case during both the Bally and Midway licensing negotiations, even though by then, Allan was already representing Atari as its general counsel, handling corporate and contractual matters.[176] Asked during a court testimony in a separate legal case about whether he sought advice of counsel as to what he should have charged Midway, Bushnell answered, "I just think that's a negotiated—item. I always felt I was as good at negotiating as anybody."[177] From the Magnavox settlement meeting came a wildly creative legal document, one that would make Atari appear to lose, but would in fact give the start-up an enormous competitive advantage that would help it secure its position as the dominant videogame company until the industry crash of 1983.

On June 9, 1976, the day before the merits of the case were to be heard, Judge Grady, of the US District Court for the Northern District of Illinois Eastern Division, entered into a Final Judgment of Consent, in which he validated the settlement that had taken place the day before between Atari,

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Magnavox, and Sanders.[178] In that ruling, Judge Grady "ordered, adjudged and decreed" that, as between these parties, the Sanders patents "are both good and valid in law and have been infringed by Atari, Inc." That same day, he also dismissed the Magnavox suit against Sears, "the parties having compromised their differences."[179] In addition to this public admission of guilt by Atari of having infringed on patents it acknowledged as valid, the settlement, dated June 8, 1976, took the form of two documents: the Settlement Agreement itself, in which the parties released each other (and in which Sears, as distributor of *Pong*, also got released, hence the order of dismissal by Judge Grady),[180] and a Non-Exclusive Cross-License for Video-Games.[181] In addition to the admission of guilt and the acknowledgment of validity of Bill Rusch's *'507* patent, the cross-license is the meaty part of the deal, although the overall win for Atari comes from the combination of all documents.

Atari gave three things to Magnavox, in addition to admitting it had infringed on the Sanders' patents.

First, the settlement included not merely a license from Magnavox to Atari of its technology, but a "cross-license." This means that each party licensed its technology to the other. In the case of Atari, one element being licensed to Magnavox was the *'483* patent. This was an implicit recognition by Magnavox that the patent that Atari had been informed a year before by its lawyers was invalid was, in fact, considered valid by one of the largest consumer electronics company in the country. This is the type of element that could potentially be used by Atari, had it to subsequently defend a suit seeking a declaration of invalidity of the *'483* patent. At the very least, Atari could wave that document in the face of competitors, bragging, "See, even Magnavox had to license this technology from us, so you should too if you don't want to get sued!!" Magnavox had single-handedly saved the facial validity of the *'483*. In a sense, then, Atari being forced to license its patent to Magnavox under the settlement (an apparent loss) turned the Toy Fair debacle (a clear loss) into a win, because Atari never had to spend a penny litigating a patent it knew was invalid to make that patent appear valid and strong again.

A second asset being licensed by Atari to Magnavox, in addition to Atari's patents, was "Atari Technology," defined as microprocessors and videogame products either on the market at the time of the agreement or planned for manufacture, release, and/or sale by Atari up to June 1, 1977. In other words, Atari granted Magnavox the right to legally knock off any current or future

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Atari product either released, currently planned for release, or that would later become planned to be released within the next year. Given the previous success of *Pong* and *Home Pong*, the rate at which Atari rolled out new successful products, and Atari's growth curve, Magnavox undoubtedly thought it had hit the jackpot. It would not be so. The Summer Consumer Electronics Show (CES) was the place and time to release new products. But the 1977 CES would not take place until June 5, 1977, four days after the closing of the time window during which Magnavox had dibs on new Atari products. On June 5, then, Atari released the Video Computer System (VCS, also known as Atari 2600). It would sell more than twelve million units by the time of the industry crash of 1983.[182] But for four days, Magnavox got no part of the action.

Finally, Atari agreed to give Magnavox a flat payment of $1.5 million over seven years, $150,000 for each of the first two checks and $200,000 for the six subsequent years, as a fee to license the *'507* patent in perpetuity (that is, until its scheduled expiration), enabling Atari to use it in all future products. This flat-fee structure was a departure of the industry standard of paying patent licensors royalty fees of 5 percent of sales. While the amount of $1.5 million over seven years might appear large, it was, in fact, peanuts for a company selling as many units as Atari, and an excellent deal because a percentage-based fee would have even further decreased the profit of a company already operating on razor-thin margins. A one-time flat fee enabled Atari to greatly gain from economies of scale, something one cannot do when the license for the underlying technology is calculated as a fixed percentage of sales for each unit. In practice, the more VCS units Atari subsequently rolled out, the less the cost of the license per unit became. In contrast, for Atari's competitors such as Mattel, which we will soon encounter, for each unit rolled out of the assembly line, 5 percent of the sales price had to be shaved off their profit margin and paid to Magnavox and Sanders, and that cost per unit remained constant, no matter the scale. This fee structure gave Atari a great competitive advantage, one that increased over time with every unit of Atari product sold. The cost of $1.5 million was also really cheap compared with what a litigation (with an uncertain outcome) against Magnavox would have cost. Remember that Flehr Hohbach had already charged Atari $113,000 for roughly a year's work on pretrial matters. Complex litigation such as this one can easily last for ten years when cases get appealed, and cost millions in legal fees.[183] Assuming a ten-year time frame, it is reasonable to think that

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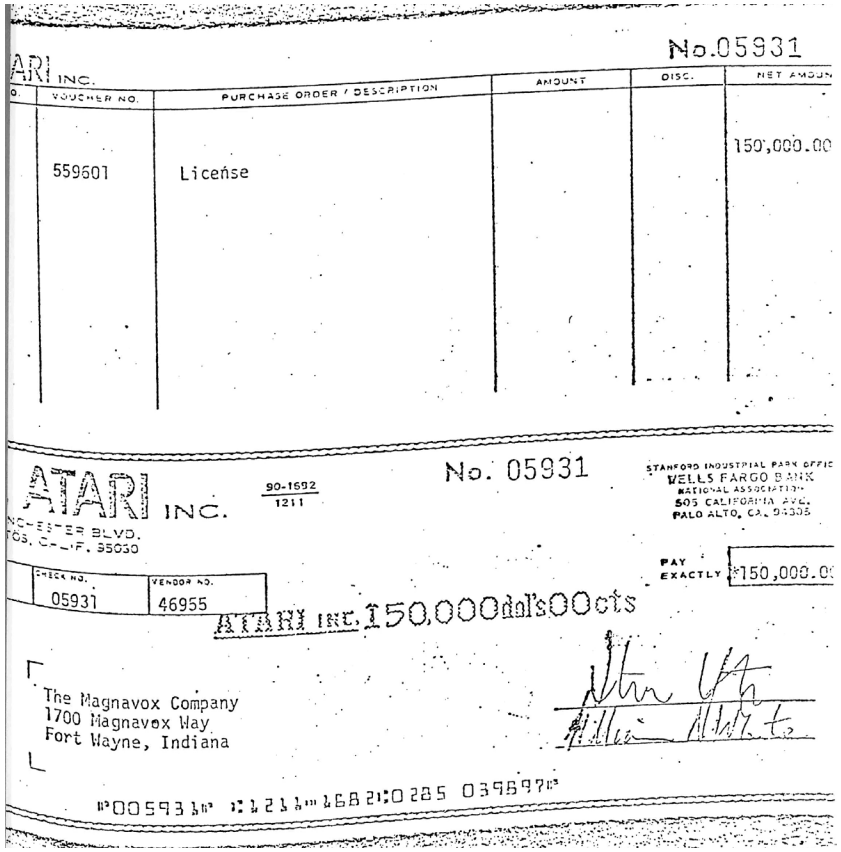

Figure 2.10
The first of eight payments sent by Atari to Magnavox: a check for $150,000 mailed as attachment to a letter from Bill White, Atari Vice President of Finance, to Tom Briody, Corporate Patent Counsel for Magnavox, on June 17, 1976. Atari/Warner closing books, schedule 13, item 6. Courtesy of Lon Allan.

litigating the case against Magnavox would have cost Atari roughly $1.5 million, with a completely uncertain outcome (in retrospect, Atari would have lost, as all those who took on Magnavox in court did, as the reader will soon find out). In fact, Alcorn recalls Flehr Hohbach giving Bushnell an estimate for $1+ million.[184] In contrast, a payment of the same $1.5 million with a guaranteed positive outcome was an extremely good deal.

In return for acknowledging infringement, licensing its patents and future products, and making a cash payment to Magnavox, Atari received three

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things. One, Magnavox, under its own license from Sanders, sublicensed to Atari the patents embodied in the Odyssey and that were the subject to the mega lawsuit initiated by Magnavox, including the *'507* patent, the Rusch patent. Atari could now release as many new products embodying the Rusch invention as it wanted—such as the VCS series—without fear of being sued, and without having to shave licensing percentages off its margins, unlike its competitors. Two, Magnavox agreed not to sue Atari or any of its customers (such as its distributors) for infringement of the abovementioned patents. This was a crucial win in the context of the acquisition of Atari then being discussed with Warner. With the IPO market then being "dead as a doornail,"[185] Warner's commitment to infuse Atari with the money it needed to grow appeared as the perfect—and only—solution. So the fact that Magnavox committed to not suing Atari provided certainty for the target company and enabled the calculation of a nonvolatile valuation. In addition, Warner was a publicly traded company accountable to its shareholders. Certainly, buying a company on the verge of being sued for all its worth by a behemoth could have been seen as a reckless move; in contrast, the settlement provided stability in the foreseeable future for the potential new subsidiary of the listed company, something that would increase Warner's own investors' confidence in the soundness of the deal. Three—and this is where Bushnell's negotiating genius really came through—Magnavox agreed to sue any Atari competitors that would interfere with Atari business by producing competing products without being themselves granted a costly license from Magnavox for the underlying technology.

Atari subsequently played its part in helping Magnavox intimidate competition. "In one day, we completely flip-flopped," Alcorn recalls: "The *'507* is the best patent in the entire world!!"[186] It was a win-win. As Alcorn analyzes in retrospect, "the settlement was even more advantageous to Magnavox because it said 'Atari endorsed it!'"[187] This joint legal flexing led to a situation wherein most competitors simply settled with Magnavox before trial, or simply paid for a license agreement before any litigation papers were ever filed.[188]

A further incentive for Magnavox to be extremely aggressive in court against Atari's competitor was that if any such competitor (or any other third party) managed to get the patents at stake invalidated, then Atari would be released for making its yearly payments to Magnavox under the settlement agreement. This meant that Magnavox could not just "sue a little" under article 4.02. The traditional defense in a patent infringement lawsuit is a

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4.02 MAGNAVOX agrees to prosecute such suits for infringement of the MAGNAVOX PRINCIPAL PATENTS as may be reasonably necessary to protect against unlicensed competition materially interfering with the business of ATARI hereunder. However, MAGNAVOX shall not be obligated to bring more than one such suit at a time.

Figure 2.11
Article 4.02 of the Non-Exclusive Cross-License for Video-Games, in which Magnavox agreed to sue any unlicensed Atari competitor. Non-Exclusive Cross-License for Video-Games between The Magnavox Company, Sanders Associates, Inc., and Atari, Inc., dated June 8, 1976.

countersuit seeking a declaration of invalidity of the patents at stake. If Magnavox had put just enough of an effort to fulfill its contractual duties toward Atari when suing Atari's competitors, but not enough to actually win, it could very well have seen its own patents invalidated. This meant that Magnavox had to put all its might in each and every battle, use the best lawyers, and hire the finest (and friendliest) expert witnesses to put on the stand. Magnavox's incentive to litigate aggressively against Atari's competitors was further exacerbated by the fact that Magnavox, having failed to innovate in the TV-set business and being, as a result, on the verge of industrial destruction, was de facto switching its business model to that of being a patent troll, living off profits for licensing patents it was not itself exploiting in manufacturing products.[189]

The result on industry of this combination of legal incentives is clearly apparent. From 1974 until the last quarter of 1982, when industry sales started plummeting, Magnavox had been successfully involved in thirteen lawsuits and had coerced forty competitors of Atari into licensing agreements.[190] By the first quarter of 1983, when the stock market value of videogame manufacturers (including Atari) collapsed, Magnavox had locked in fifty-nine licensees for its patents.[191] That Magnavox had become an aggressive patent troll is evidenced by the fact that for years, Ralph Baer continued hunting down potential infringers of the Sanders patents,[192] and Sanders and Magnavox worked in tandem to extract value from products made by others

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rather than to protect their own product line. For example, in 1987, with both the Odyssey and the Odyssey 2 long off the market, and Atari dismantled by Warner and sold for scraps, Richard Seligman, director of patents and licensing for Sanders, forwarded to a lawyer for North American Philips (which had purchased a bloodless Magnavox) a report from Ralph Baer, who had just attended the Summer CES Show in Chicago, listing potential infringers. He added: "I am also enclosing . . . the June 8, 1987, issue of 'Television Digest'. It looks like the TV game business is expanding and, hopefully, our income will increase."[193]

In the end, this admission of guilt by Atari of having infringed on the *'507* patent was a great win. Atari secured an implicit acknowledgment of the validity of a patent, the *'483*, which it knew was vitiated. In exchange for what a successful lawsuit would have cost, it received a perpetual license to use the Magnavox patents, whereas all of its competitors would have to pay a percentage fee, preventing them from benefiting from economies of scale in this respect, unlike Atari. And, it received free legal muscle from Magnavox, which was now bound to sue Atari's competitors. For a mere $1.5 million, Atari had the best of all worlds. This deal would prove dreadful for Atari's competition.

Magnavox Goes after Atari's Competitors

For more than two decades, Magnavox would aggressively pursue anyone it perceived to be infringing on the *'507* patent. This series of lawsuits would become "the videogame industry's longest series of intellectual property disputes."[194] Particularly interesting is that the patent covered an analog circuit, but Magnavox's lawyers manage to convince the courts that later-arising technologies, from digital circuits to microprocessors to stand-alone software cartridges, infringed on the *'507*.

First Legal Victory against Bally/Midway et al. (Digital Circuits)

With the Atari case settled and out of the way, courts proceeded to rule on the remaining suits from the first batch initiated on April 15, 1974.

After many procedural twists, the cases were consolidated and ruled upon by Judge Grady of the United States District Court for the Northern District of Illinois (Eastern Division) as *Magnavox Co. v. Chi. Dynamic Indus.* on January 10, 1977. In addition to Chicago Dynamic Industries, the list of

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defendants included Bally, Midway, Seeburg, and Williams Electronics. The judge ruled decisively in favor of Magnavox and Sanders in a way that was so sweeping that it would serve as precedent and ground Magnavox's legal victories for years to come. Judge Grady first gave a nod to Ralph Baer's work by describing the *'480* as "the pioneer patent in this art, and I refer to the art of playing games on a small scale, with the players participating in the game in an environment such as a home or someplace where a large computer would clearly not be available."[195] But, contrary to popular belief fueled mainly by Ralph's Baer's obsession for being recognized "as the original inventor of videogames," the "Father of Videogames,"[196] the patent that would be the centerpiece of twenty-four years of litigation was William Rusch's patent, the *'507*. In fact, Magnavox never actually sued anyone for infringement of the *'480*.[197] Judge Grady described the novelty of Rusch's work as creating, on a screen, a "movable hitting spot which is controlled by the player and which, by striking a hit spot, can change the direction of that hit spot."[198] Noting that the Rusch invention made possible a "wide variety of games," and that Nolan Bushnell had seen a demonstration of the Odyssey prior to instructing Al Alcorn to design a ping-pong game,[199] he concluded that Bushnell, "when he did see the Odyssey game, what he did basically was to copy it." Atari, of course, was no longer part of the action, having settled earlier with Magnavox, so what the judge was ruling upon was whether the myriad of coin-op *Pong* and *Home Pong* knockoffs, produced by the remaining defendants, Chicago Dynamic (for *TV Ping Pong*, *TV Tennis*, *Olympic TV Hockey*); Bally and Midway (for *Winner*, licensed by Atari under the *'483* patent, and *Playtime*); Seeburg (for *Paddle Ball*, *Pro Hockey*, *Pro Tennis*, and *Olympic Tennis*); and Williams Electronics, infringed Rusch's patent.[200] Unsurprisingly given the above, he answered this question positively:

> I believe that the defendants' games do infringe the claims of the '507 patent to the extent that they contain or use a playercontrolled [*sic*] movable hitting symbol which, when it coincides with a hit symbol, causes a change in direction of that hit symbol. I believe that all of the defendants' games do exhibit that feature and, therefore, I hold that all of the defendants' games do infringe the *'507* patent.

What was most significant in this case was not that the judge would characterize the games at stake as looking the same as the original Odyssey games—the myriad of knockoffs at the time essentially all looked the same. Rather, it is the way he dealt with the defendants' defense. The defendants had claimed that their result, a "movable hitting spot which is controlled by

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the player and which, by striking a hit spot, can change the direction of that hit spot," was achieved using a different technology than the one used in the Odyssey—specifically, they all used digital rather than analog circuitry. Judge Grady rejected this difference as immaterial:

> It seems to me that these differences are not sufficient to take the defendants' games out of the claims of the *'507* patent, read in the light of the specifications and drawings. First, the use of digital instead of analog circuitry, it seems to me, is a difference which is not material. I regard analog and digital circuitry as two means which are interchangeable largely, which are equivalent, and which are, therefore, essentially the same means for achieving substantially the same results in substantially the same way.

He went even further, sweepingly rejecting the process of reverse engineering as a legitimate way to create a result similar to that of a patented invention without infringing on the patent, by using a different means of achieving the same result:

> If one were to say that a mere change from analog circuitry to digital circuitry were to be a sufficient change to deprive an analog patent of protection, then it seems to me that every electronic invention would be fair game for anyone who simply used the reverse method of circuitry to achieve the same result. Had the plaintiffs, for instance, chosen to use the digital method, the defendants could as easily have used the analog method and claimed immunity by reason of having done that.
>
> I listened with great attention and with, I hope, some modicum of understanding to the testimony on both sides as to the differences and similarities between analog and digital circuitry, and I am convinced, on the basis of my understanding of it, that these are substantially the same thing. They simply are different choices open to the designer of the particular device, and that chocie [*sic*] is dictated by such things as economy and items of that kind.

In nontechnical words, the significance of Judge Grady's ruling in favor of Magnavox was that any game involving a "movable hitting spot which is controlled by the player and which, by striking a hit spot, can change the direction of that hit spot," would violate the *'507* patent, no matter the technology used to create such a visual result. In practice, then, Magnavox was granted a monopoly over all ball-and-paddle games.

Armed with *Magnavox Co. v. Chi. Dynamic Indus.*, Magnavox proceeded to actively sue any company producing such games without having obtained a license. But microelectronics technology was advancing quickly and was becoming cheaper in unison, as Gordon Moore had observed in his seminal

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1965 article discussing what is now commonly known as Moore's law, in which he noted that integrated circuits would "lead to such wonders as home computers."[201] In 1971, indeed, Intel, cofounded by Moore, released its first microprocessors, which are *computer* processing units. Soon thereafter, video renditions of ball-and-paddle games were being produced using microprocessors, not discrete circuits. Would Judge Grady's rationale of equivalent means still stand? And would advanced games, such as American football, soccer, hockey, or basketball, be considered similar to a ping-pong game? After all, Rusch's patent only ever explicitly considered the latter: "By way of example, modified versions of the well-known game of *ping-pong* may be played by two participants by physically or electronically placing an appropriate mask representing the net upon the screen of the television receiver. Three displayed spots represent two paddles and a ball wherein the ball is moved in a particular direction when hit by a paddle."[202] (Emphasis added.)

Second Legal Victory against Mattel (Microprocessors)

These questions came to the docket of Judge Leighton, of the same United States District Court for the Northern District of Illinois, Eastern Division, that Judge Grady belonged to, in 1982, for a lawsuit initiated in 1980 by Magnavox against Mattel and a number of its distributors, including Sears, the original distributor of *Home Pong*, for violation of the *'507* patent, in *Magnavox Co. v. Mattel, Inc*.[203] A revolution in videogame technology had begun in 1977. Several manufacturers, Atari, Fairchild, Bally, and Mattel, had introduced or started development of new systems composed of a console and cartridges. Before that, games were simple circuits, not computers. *Pong* had been designed by Alcorn without a single line of software code.[204] With the new paradigm, games, coded as software, were written in read-only memory (ROM) cartridges. These were inserted into a console, which was a true computer using a microprocessor that processed the software. Atari had introduced the Video Computer System at the June 1977 Consumer Electronics Show, under the *'507* license it had received from Magnavox. That same year, Mattel, the toy company most famous for the Barbie doll, started development of the Intellivision, which was released in 1979. Just like the VCS, the Intellivision featured a console, the "Master Component," which included a microprocessor built by General Instruments and software cartridges made by or for Mattel. When plugged into the Master Component, the cartridges

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formed a "television game apparatus intended for connection to a television receiver," something Magnavox claimed violated the *'507* patent, since one could now play ball-and-paddle games.[205]

The first question before the judge was whether the Mattel games resembled a ball-and-paddle game enough to be covered by the *'507* patent. After all, that patent did not cover all videogames. In the original tennis and ping-pong style games, and as described in the *'507* patent, a "distinct motion" was imparted to the ball symbol "upon coincidence" of the ball and the paddle. In other words, although "each player had an 'English' control which permitted him to alter the vertical motion of the ball after he had intercepted it," once the paddle hit the ball and that motion was imparted, the player could no longer influence the motion of the ball. Mattel games were different, especially *NHL Hockey*, *NASL Soccer*, *NFL Football*, and *NBA Basketball*. At stake was what happened when a defensive player (the equivalent of the ping-pong paddle), intercepted an offensive ball and drove it back across the field, rink, or court. In a ping-pong game, once the defensive player hit the ball back with her paddle, and a direction was imparted by the computer for the bounce, the player no longer had control over the ball's trajectory. In contrast, in the Mattel games, once the defensive player caught the ball, he could run it back across the field at his leisure, keeping complete control over his player's motion, and with the ability to change this motion at any time. This ability to dribble, skate, or run at will made these games much more fun than the simple ping-pong games people were, by then, tired of. But after dissecting each game in a nine-page description that, in contrast, would make the rules of American football almost fun to read to soccer fans, Judge Leighton decided that these games were all one and the same and that the result infringed Rusch's *'507* patent. That decision drastically expanded the reach of the *'507* over games that could not possibly have been developed on the Odyssey's circuit-based platform.

The next question before Judge Leighton had to do with the technology involved in reaching the resulting video display of symbols moving on a screen. Mattel argued that even if the result was similar when it came to the player experience, the means of achieving such result was so different that its system could in no way infringe the *'507* patent. The legal questions raised in the Mattel case are extremely complex and the subject of a myriad of books and articles.[206] The claims of the *'507* patent were written using a special patent language reciting "means" for performing a specified function. The

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patent statute directed how such language was to be interpreted,[207] and the core "issue was whether the 'means plus function' claims were infringed."[208] In other words, the protection scope of the *'507* patent was not simply a *result* (the display of a ball-and-paddle game), but one obtained by a combination of particular *means* of achieving that result—specifically,

> In combination with a standard television receiver, apparatus for generating symbols upon the screen of the receiver to be manipulated by at least one participant, comprising: means for generating a hitting symbol, and means for generating a hit symbol including means for ascertaining coincidence between said hitting symbol and said hit symbol and means for imparting a distinct motion to said hit symbol upon coincidence.[209]

Mattel argued that while the result (the display on the TV screen) of its system was similar to that of the Odyssey, the means of achieving it (the technology behind it) was different. Since the means were not equivalent, then, there was no infringement. Specifically, it argued that

> the circuitry of its television game is more than just a digital circuit, but that it includes the basic components of a digital computer in that it is based upon using a microprocessor as a game play processor and a display processor, and that the *'507* patent includes no mention of any microprocessor or many of the items which are associated with a microprocessor such as a random access memory, a read only memory, an addressable multiple-bit memory device, graphic random access memory, graphics read only memory, content addressable memory, X and Y position registers, character start address registers, no interaction matrix, no software program, no dispatch table, no binary data, no arithmetic and logic unit, no central processing unit, no game play processor, and no display processor.[210]

Judge Leighton relied on Judge Grady's opinion in *Magnavox Co. v. Chi. Dynamic Indus.* to dismiss Mattel's argument. For Leighton, because the two technologies "are doing essentially the same thing," they are then "fully equivalent to each other," notwithstanding the fact that they are, as an apparatus, wholly different:

> Because of the advances in technology which have occurred since Rusch invented the subject matter of the *'507* patent in 1967 and filed his original patent application in 1969, Mattel is able to achieve at relatively low cost games of much greater complexity and variety than those achieved by the apparatus disclosed in thee *'507* patent. The technology available today for the manufacture of television games was simply not available in the 1967 time frame. However, the use of currently available technology to implement its television games does not alter the basic nature of those games or avoid the Rusch *'507* patent.[211]

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Under this ruling, then, what practically became patented was the *function* performed by Rusch's invention, notwithstanding the fact that what Rusch had patented was an "apparatus and methods," that is, a specific combination of "means plus functions." As a then-young lawyer for Mattel reflected, thirty years later, "Magnavox was espousing a theory where all products that reach the same results as the patented circuit must be equivalent," and "it seemed as though the court was reading 'means' as anything under the sun that performs the recited function."[212] This was a sweeping ruling, not just in legal terms, but in what it meant for the industry. From then on, any technology developed after Rusch invented his analog circuit would be infringing the *'507* patent, no matter that Rusch could not have conceived of such technology, since the underlying building blocks, microprocessors, were not available to him then. The practical result was that what truly became patented was not a technology, but the *gameplay* in which one symbol hits another symbol on a video screen. Any such game, or game platform enabling such game to be played, could from then on be sold only with the permission of Magnavox. This case was a huge blow to the videogame industry, and to innovators in general, because it provided inventors with a negative incentive to creating more efficient technologies. In today's world, the rationale behind *Magnavox Co. v. Mattel, Inc.*, if applied, should lead a court to say that an electric car infringes on a patent granted for an internal combustion engine powering a car, since both engines, although entirely different, enable a car to move. Courts would later move away from the *Mattel* rationale and instead started focusing on supporting innovation, in ways that fostered competition in the videogame industry (as we observe in chapter 6 in the context of lock-out chips). But, in 1982, that was the ruling—and what was a significant blow to Mattel was a huge win for Atari.

The Intellivision had been a problem for Atari, as it was widely considered to feature better graphics and sounds than the Atari VCS. Although Atari was still the market leader, with twelve million units of the console sold in 1982 (up from 800,000 in 1978) and a market share of roughly 70 percent of all consoles sold by late 1982,[213] Mattel was becoming a significant threat. In fiscal year closing January 31, 1982, its profit had increased 500 percent from the year before, a success attributable in large part to the Intellivision. One million units of the platform had been sold in 1981, five times the 1980 figures, leading Mattel to tell the Securities and Exchange Commission in 1982 that it had "staked out close to 20 percent of the domestic video-game

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market."[214] So when Judge Leighton entered an injunction ordering Mattel and Sears to remove the Intellivision from store shelves and then, in September 1982, denied both companies a stay from this injunction pending their appeal, just as the holiday shopping season was kicking off, the executives at Warner had reasons to be ecstatic. It was especially so since Atari, now managed by complacent New Yorkers, had long stopped innovating (which had caused the departure of Bushnell and Alcorn) and was living off a now dated VCS. Five years is an awfully long time in the computer industry. The blow was especially cruel for Mattel, since Judge Leighton, who had clearly been wowed by Magnavox's lawyers, declared that staying (suspending) the injunction to remove the Intellivision from the shelves would lead to Magnavox suffering "irreparable harm," notwithstanding the fact that the Odyssey, as described by the *New York Times*, had "limped far behind in third place"[215] and was selling products qualitatively far behind Mattel and Coleco.

Mattel appealed to the United States Court of Appeals for the Federal Circuit, a then brand new court with nationwide appellate jurisdiction over patent law cases; in fact, the case was the very first appeal to that court![216] Mattel was eventually allowed to sell the Intellivision again in time for Christmas but,[217] just like the others, had to settle with Magnavox.[218] Judge Leighton's decision was questionable, and there are reasons to believe that Mattel would have won its appeal before the Federal Circuit.[219] In fact, in a series of cases rendered between 1985 and 1987, the appeals court made explicit that not just anything that achieves the same result as a patented invention is infringing, and that the accused product is not infringing if its structure is not equivalent to the patented structure.[220] In the Mattel case, the structure of a microprocessor is significantly different from that of a simple analog circuit, and it is therefore quite possible that Mattel would have won in appeal on that point. In 1999, the Federal Circuit went as far as to explicitly state that an equivalent structure "must have been available at the time of patent issuance" for there to be infringement. In this case, because microprocessors were not available when Rusch designed his patented analog circuit, then one could argue Mattel could not possibly infringe on the *'507*.[221]

Bear with the legalese for a second, to understand that things get even trickier here. The question of equivalency is actually a two-headed beast. There are two separate sub-bodies of law dealing with it, one called "Section 112 equivalents," and the other called "the doctrine of equivalence." Each has its own set of interpretative rules. Under Section 112, the courts

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clarified *after* the Mattel case that later-arising technologies will not count as an equivalent. But under the broader doctrine of equivalents, courts have ruled, also *after* the Mattel case, that later-arising technologies can count as an equivalent. Had Judge Leighton known of these cases, then, his ruling in favor of Magnavox *may* have been well-grounded. But at the time, there were few cases involving those particularly arcane concepts, little guidance from the top, and the record shows that the rulings that exist were not particularly consistent across districts. Judge Leighton did his best with little guidance. The point here is not to confuse the reader even further, but to show that, in this area of patent law, things were (and continue to be) incredibly volatile. This creates a powerful incentive for parties to settle because, to borrow from Forrest Gump's mother's trademark saying, patents lawsuits are "like a box of chocolates. You never know what you're gonna get." In fact, as the patent lawyer for Mattel later reflected, "no board of directors is willing to risk a permanent injunction against their product if they can just pay to settle things."[222] And so, in early February of 1983, on the eve of the Federal Circuit rendering its opinion, the parties settled (which irritated the judges, who had prepared an extensive opinion on this complex legal topic).[223] While Mattel, unlike Atari, did not have to acknowledge infringement, the toy company had to pay, and became Magnavox's fifty-ninth licensee.[224] This was up nineteen licensees from the forty that Magnavox had had under contract just three months before,[225] a tribute to the magnitude of the impact of these court rulings on the industry as a whole. Again a huge win for Atari in terms of erecting barriers to entry against the competition.

At that point, Magnavox had cornered the market for ball-and-paddle games, as well as any sports game involving any sort of contact between a ball and a player, played both on coin-top and at home, and rendered through analog circuits, digital circuits, and microprocessor-based consoles and ROM-cartridge *combinations*.

Third Legal Victory against Activision (Third-Party Software)

The courts would extend Magnavox's monopoly one step further in *Magnavox v. Activision* (1986), by declaring that third-party *software*, manufactured and sold by companies separate from the ones building the consoles, infringed on the patent granted for Rusch's original *hardware*. In 1979, four Atari game-design engineers got fed up with Warner-Atari's style of management. Ray Kassar, the new CEO, mocked by Atarians as "the towel salesman,"

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a reference to his previous career as an executive in the linen business, showed little understanding, much less consideration, for creative types, while busy re-creating a Manhattan-like corporate environment within the company.[226] At a point, the four engineers realized that they had contributed 60 percent of the previous year's $1 million in revenue with the games they had created.[227] They demanded the same recognition the music stars Warner was publishing were getting, in the form of royalties, and name credits on the cartridge's jacket. To which Kassar replied, calling the engineers "towel designers" (he would later tag another group of engineers "high-strung prima donnas"), "I've dealt with your kind before. You're a dime a dozen. You're not unique. Anybody can do a cartridge."[228] As a result, David Crane, Larry Kaplan, Alan Miller, and Bob Whitehead left Atari and founded Activision with a record industry executive named Jim Levy after raising $700,000 from Sutter Hill Ventures. The new start-up became the first third-party game manufacturer, in an industry in which the hardware and software, although physically unbundled, had always been produced by or on behalf of the same entity: Atari made cartridges for the VCS, and Mattel for the Intellivision, and that was the uncontested state of affairs. At that point, Warner-Atari had become a little like Magnavox: rather than innovating and rolling out new products that would disrupt its old properties, it hung on to existing, aging assets and milked them dry.[229] Alcorn had left after his holographic game, *Cosmos*, was rejected for being too innovative (the technology developed by his team would end up being the basis for holograms embossed on modern credit cards).[230] Kassar thought of the videogame industry as of the towel business: if you have a good design, why change it? So when his best game designers left and started selling ROM cartridges under their own brand to function with the VCS, putting a major dent in Atari's software golden goose, Atari sued. There wasn't much of a legal argument available. The VCS system as a whole was not patented. There was no lock-out chip (these would come a few years later, as a reaction to the Activision case discussed in chapters 4–6). And, in California, no non-compete clauses could keep the talent roped in, since they are not enforceable there. Atari sued on a bogus trade secret violation claim. The two companies ended up settling in 1981. The settlement is widely considered in the industry as an admission of defeat by Atari, an acknowledgment that the hardware manufacturer could not legally block the release of compatible third-party software. The floodgates were open, and by late 1982, several long-established entertainment or toy companies such as

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Parker Bros., 20th Century Fox, Fisher-Price, and CBS were producing over two hundred ROM cartridges for the VCS.[231] Atari's share of the home game market dropped to 40 percent in 1983.[232] But, once again, Magnavox came to Atari's rescue, by waving its *'507* patent in the face of Atari's competition.

In March 1981, Magnavox reached out to Activision and attempted to extract licensing fees from the software company, indicating that Activision was infringing the *'507* patent. Activision's lawyers replied that even if the games were of the types covered by the patent, there was no infringement, since the Activision games were designed to work in combination with the Atari VCS, itself already licensed by Magnavox under the 1976 settlement.[233] Magnavox replied that the license to Atari did not cover games not sold by Atari, even when used with the licensed VCS console, since "the license to Atari only inures to game combinations sold by Atari."[234] Judge Legge, of the US District Court for the Northern District of California, sided with Magnavox. He ruled that because the combination of the ROM cartridge and the console produced a result that was patented, that because Activision did not itself have a license from Magnavox, and that because the ROM cartridge had no purpose other than to be used in connection with the VCS, Activision was liable.[235]

What did this case mean for the industry? By that point, although the *'507* patent had nothing to do with software, since the Odyssey contained only analog circuitry and not a single line of code, Magnavox had control over any circuit-based console (analog or digital), any microprocessor-based console, and any ROM cartridge containing *software*, even if it was not produced by an unlicensed *hardware* manufacturer. A company that had not created a single line of software in connection with its patent now controlled the entire burgeoning third-party software industry, as long as a game involving contact between moving elements was involved. As Alcorn sums it up, "These bastards were getting money from anybody putting a videogame out!"[236]

Amusingly, Atari itself had not been able to control Activision and prevent the sale of third-party software for its VCS console (as we find out in chapter 4). But the 1976 settlement, which at first sight looked like a blow to Atari, had provided Magnavox with incentives to go after Atari's competition and curb such competition on Atari's behalf. In 1989, Activision lost its appeal to Magnavox. By 1991, the company, renamed Mediagenic, was in dire financial trouble and planning to file a chapter 11 reorganization. Faced

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with the fact that it would never recover the damages awarded by the courts, Magnavox, now North American Philips Corporation, agreed "that conversion of judgment to equity in the reorganized corporation [was] the most reasonable way to realize some return on [its] judgment,"[237] meaning that Magnavox would assume ownership of Activision shares in lieu of receiving damages. The process was completed in November 1992.[238] Where Atari had been unable to bend Activision into submission, Magnavox, once again, did it for them, by putting the final nail in Activision's coffin and taking ownership of its remains.

Courts would later recognize that the immense fertile ground for innovation created by the unbundling of hardware and software should be protected. It would steer away from the Chicago Dynamics, Mattel, and Activision rationale, and come to protect third-party software creators, even as they resorted to reverse engineering of patented hardware. We explore this theme in the context of lock-out chips rolled by console manufacturers Sega and Nintendo and circumvented by ROM cartridge developers Accolade and Atari-Tengen. The reader should turn to chapters 4–6 to follow this narrative. Chapter 3, meanwhile, provides, as an intermission, a deep dive into the complexity of patent law, in the form of a moot law school case study focusing on the validity (or invalidity?) of Bushnell's *'483* patent. Step into the shoes of a law student, about to take a twenty-four-hour take-home exam, faced with the task of providing legal advice to a virtual client—in this case, Atari. Ready, Law Student One?

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3 The Lawyer's Corner: Ready Law Student One

On February 19, 1974, Atari cofounder Nolan Bushnell obtained a patent for his invention called the "Video Image Positioning Control System for Amusement Device." The invention, generally referred to as the *'483 patent*, enabled Bushnell and his partner Ted Dabney to fit a videogame on a simple printed circuit board, with no need for the expensive computers and complicated software previously required. The technology was embodied into all of Atari's games of the era. The patent, the trade press noted, "recognizes Atari as the originator of the videogame since this circuitry is essential for videogame operation." And, in theory, the patent gave Atari a legal monopoly over the technology in question, meaning no one could produce clones of Atari games without obtaining a license from Atari. Only in theory . . . As clones proliferated, Atari prepared to sue archrival National Semiconductor for patent violation, over a clone of Atari's *Home Pong*. For the suit to be successful, the patent actually had to be valid. But was it? As Atari put the litigation machine in motion, its own lawyers advised Bushnell not to proceed. Perhaps, the patent was in fact vitiated. This chapter immerses the reader deep into a raging ocean of arcane statutes and not-always-coherent case law, to reveal the complexity of the practice of patent law, a cornerstone of videogame law.

The Setup

Lawyers are tasked with providing their clients with legal advice as to which course of conduct to adopt. The path to creating that advice is more complex than meets the eye. It requires an analysis of an often multilayered fact pattern, in the light of often-arcane statutory provisions, which themselves must be understood by reference to case law produced over a long period of time, in various jurisdictions, by judges who may not always understand the

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subject matter or may not agree with each other. The key to solving these complex puzzles is to break them down into smaller puzzles and to solve these in a systematic way, step-by-step. This process is lengthy and tedious. In the end, the legal advice that is provided to the client resembles a black box, because after reaching his or her opinion, the lawyer strips the final product of the steps it took to reach it. This chapter gives the reader a glimpse of the murky paths to simplicity. You have stepped into the shoes of a law student. Your mission is to provide mock legal advice to your virtual client, Atari.

Roll back to the scene at the Waldorf Astoria Hotel in New York City, at the February 1975 Toy Fair discussed in chapter 2. Atari was presenting its *Home Pong* console in the hope of finding a distributor that would offer the start-up a better deal than Sears, the largest US retailer at the time, had just provided. Problem was, National Semiconductor, a company with much more money and much bigger production capacity than Atari—meaning an ability to scale and undercut Atari price-wise—had already knocked off Atari's product and was presenting it at the booth next door. So Atari's motley crew, Bushnell, Alcorn, Keenan and Lipkin, walked up to National like shrimpy neighborhood kids whose sandlot had just been invaded by much bigger kids from the other side of the tracks, and, flexing the little legal muscle that they had, delivered them a copy of Bushnell *'483* patent, the one that, on paper, would preclude any competition from happening. Here, you bastards![1]

When Atari subsequently told their lawyers that they had served the *'483* patent on National Semiconductor, along with instructions to cease and desist selling a product that competed with *Home Pong* and infringed the patent, the law firm partner in charge told Atari that, well, the patent that the partner's underling had filed for had in fact been "filed erroneously, badly, and . . . was not enforceable at all."[2] How did the partner reach that (accurate) conclusion? Let us venture down the path of his reasoning. That walk will reveal the complexity of patent law that hides behind seemingly simple legal opinions.

Nolan Bushnell's *'483* patent had been granted. On its face, it was presumptively valid. So why did Atari's lawyers now think it was not enforceable? The potential flaw had to do with the statutory requirement that the invention be novel.[3] This requirement is set forth in Title 35 of the United States Code (the codified federal laws of the United States), Section 102(b) (hereafter referred to as 35 USC 102(b), or simply Section 102(b)). Note that

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the law was changed in 2011 by the Leahy–Smith America Invents Act (AIA). Patent lawyers continue to refer to the previous provisions as Section 102(b), or, sometimes, "pre-AIA § 102(b)." In this chapter, all references to Section 102(b) are to "pre-AIA § 102(b)." Under Section 102(b), then, a person who otherwise meets the general requirements to be issued a patent shall be entitled to a patent unless "the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States." This is called a statutory bar. Such a mechanism "operates like a statute of limitations to force an inventor to apply for a patent within a given time period after the inventor engages in certain activity."[4] This statutory bar serves an important policy purpose in providing inventors with an incentive to patent (and therefore disclose) their inventions diligently.[5]

Most US intellectual property law, at its origins and before it was corrupted by corporate greed, was about the public interest. The US Constitution, Article 1, Section 8, states that Congress shall have the power "to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries." The idea behind this provision is to create an incentive for creators to create, by allowing them to monetize their creations through a monopoly over them, but only for a limited time.[6] The end goal is not to make Walt Disney or Sonny Bono, or their heirs, or their heirs' heirs, mega rich, but to encourage creation for the benefit of the public.

In the field of patents, one policy purpose behind the statutory bar is to encourage the prompt filing of patent applications for inventions so that the public can benefit by freely using the invention as soon as the term of the patent ends. The earlier the patent application is filed, the earlier will a resulting patent expire, and the earlier the invention will end up in the public domain. The mechanism prevents the inventor from unduly "commercially exploiting the exclusivity of his invention substantially beyond" the period granted by the patent statute, currently twenty years from the earliest patent application filing date, by forcing them to file within one year of the invention being made public.[7] Under Section 102(b), any description in a printed publication, any public use, or any sale (or, as we'll find out, "offer for sale"), triggers the one-year period. The key date to look at is called the "critical date." The critical date occurs one year prior to the filing of the patent. Any

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of the above instances, if they take place before the critical date, "will bar the patent,"[8] that is, require that the patent examiner deny the application (if the examiner knows of the activity) or allow a federal court to invalidate the patent (and sometimes impose penalties on the inventor or patent owner for misconduct).

In the case of Nolan Bushnell's *'483* patent, the filing date of the patent was November 24, 1972. The critical date was therefore November 24, 1971. Any triggering event happening before November 24, 1971, then, should have barred the patent. The burden of proof of showing the invention was patented, described in a printed publication, in public use, sold or offered for sale, more than one year before the application, rests on the US Patent and Trademark Office (USPTO).[9] Therefore, an examiner could overlook (or not be aware of) such an instance and issue a patent to an invention otherwise unpatentable. However, a patent can always be invalidated after the fact if a party contesting its validity proves that any of the instances that should have triggered the bar at the first place but had been unknown to or overlooked by the USPTO did indeed occur before the critical date.

In our case, if the game *Computer Space*, the first to have embodied Bushnell's invention, had been patented, described in a printed publication, in public use, sold or merely offered for sale, prior to November 24, 1971, then the patent would have been putatively (virtually) vitiated, and subject to invalidation by a competitor willing to litigate against Atari or, in the case of National Semiconductor, forced into litigation as a defendant by Atari. Did any of these events happen? And, if so, would National have been able to prove that they did?

Let the reader be aware that Section 102, while "deceptively straightforward at first reading . . . may seem a rather bewildering Pandora's box of arcane conventions and obscure terms of art."[10] In fact, "much controversy and disagreement surrounds the meaning of" some of its provisions,[11] and lawyers must look to "extensive case law on the subject" since "the Patent Act does not define what specific acts will trigger the 'public use' or 'on sale' statutory bars." As the San Francisco *Daily Journal*, a leading trade publication, pointed out in 2003, "decisions on this issue have been, and likely will continue to be, fact-specific."[12] One, the law is a mess, leaving ample space for endless arguments and counterarguments through in-depth case law research and creative lawyering. Two, we will never know for sure whether the *'483* patent would have been declared invalid if litigated, because it never

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was litigated. Upon advice from counsel, Atari's executives had the sense to not attempt to enforce the *'483* against National Semiconductor, something that would most likely have triggered a counterclaim of patent invalidity. That is, in order to defend itself against a patent infringement lawsuit brought by Atari to preclude National from manufacturing *Home Pong* knockoffs, National Semiconductor would likely have asserted that the *'483* patent was in fact invalid because of one of the bars outlined above, and therefore not enforceable.

Absent such actual litigation, however, the *'483* remained valid on its face until it expired on February 19, 1991, seventeen years after being granted. It was even licensed to competitor Magnavox in 1976 through the settlement discussed in chapter 2. We will never know whether the patent would have been invalidated in litigation. Since the lack of legal certainty makes for great law school exams, let us play law student and pretend that our final exam in our patent law class asks us to provide advice to Atari's management as to whether or not to sue National Semiconductor. First step, was the patent putatively vitiated, and, if so, would National have been able to prove that it was? We must look at each of the four statutory bars outlined above, and apply them to our fact pattern, one by one, systematically. We need to look at all of them even if we feel strongly that one alone would invalidate the patent, for we never know what a judge will rule (several counts of indictment, in this sense, are better than one). Let us remember that the expressions "in public use," "described in a printed publication," and "on sale," in this context, are legal terms of art that must be applied to the fact pattern not in light of the dictionary, but of case law and administrative practice. Let the complexity begin.

The Facts

Let's first recap the facts. In March of 1971, Bushnell had licensed, to a company in Mountain View, California, Nutting Associates, the rights to manufacture and sell the game *Computer Space*, which embodied (contained) the invention, in exchange for 5 percent royalties on unit sales.[13] It is unclear when the game was first shared with the public. Bushnell testified in court that "the first time at which [he] had an apparatus completed on which you could play any version of *Computer Space*" was "probably April or May of '71," but there was no mention in this testimony of when the game was made

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Figure 3.1
The first known print ad for *Computer Space*. *Cash Box*, November 27, 1971.

available outside of his manufacturing facility.[14] It is possible that Bushnell placed the first unit at a bar near Stanford University named the Dutch Goose sometime during the summer of 1971, but there does not seem to be tangible evidence of that besides Bushnell's own recollection uttered in informal public speeches, such as a 2011 paid talk at Google.[15] What is certain, however, is that four units were displayed, and tested by the public, in October 1971, at the Music Operators of America (MOA) show in Chicago. Detailed reports of the Nutting Associates *Computer Space* exhibit appeared in *Cash Box*, a leading trade publication, on October 30. The first print ad for *Computer Space* appeared in *Cash Box* on November 27, 1971. The first units rolled out of the Nutting factory in December 1971 or January 1972.[16]

Let us now look at the statutory bars in details. A patent application will be rejected, or a patent invalidated after the fact, if, more than one year prior to the date of application for patent (the "critical date"), one of the following happened: "the invention was *patented* or *described in a printed publication* in this or a foreign country or *in public use* or *on sale* in this country, more than one year prior to the date of application for patent in the United States."[17] To follow the chronology of facts, and for the sake of simplicity, we will analyze

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the bars in the following order: (1) patented, (2) in public use, (3) described in a printed publication, and (4) on sale.

Level 1: Patented

Bushnell's invention had not been patented by anyone else before the critical date. This is easy to verify through the USPO patent database.[18] Therefore, we can confidently advise Atari that this first statutory bar would not invalidate the *'483*. Attention, Law Student One: just like the first level of a videogame, it gets more complicated from here.

Level 2: Public Use

A person shall be entitled to a patent unless the invention was "in public use" in the United States more than one year prior to the date of the application for patent, also known as the critical date. In our case, the critical date is November 24, 1971. It is not enough for the invention to have been *built* for it to be in public use. There needs to be something more. Courts have for long generally considered that putting an invention on display in a non-private space is "public use."[19] It is unclear, however, when the first public use of *Computer Space* occurred. Nolan Bushnell recalls that it happened at the Dutch Goose bar, near Stanford University. He does not mention the exact date of when he conducted this marketing test, although he did testify under oath in a court case that "the first time at which [he] had an apparatus completed on which you could play any version of *Computer Space*" was "probably April or May of '71."[20] A number of hobbyist curators, amateur historians, and freelance writers have dated the bar test as of August 1971, but without providing a source.[21] Such a display, as a test unit playable by the public at a bar, before the critical date, would trigger the statutory bar and vitiate the patent.

Now, Atari could argue that placing a test unit in a bar is a mere "experimental use," one that would "negate" the public use bar "under the judicially developed experimental use doctrine. This doctrine negates or excuses what would otherwise appear to be statutory bar-triggering activity" prior to the critical date."[22] In other words, "testing of an invention in the normal context of its technological development is generally within the realm of permitted experimental activity" and does not trigger the public use bar.[23] However,

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National Semiconductor could effectively rebut that argument, because "market testing" is not considered to be "experimental use" and therefore constitute bar-triggering "public use."[24] In this particular case, because Bushnell testified in court that he had "an apparatus completed on which you could play any version of *Computer Space*"[25] by May of 1971, it seems clear that the alleged bar test of August 1971 was a market test, one that would trigger the bar.

The burden of proving patent invalidity rests on the party asserting invalidity,[26] and courts have required evidence that is "clear and convincing" to satisfy this burden.[27] Could National Semiconductor prove that such a market test actually took place at that place and time? How much credit would a court give to work that does not cite a primary source, and how much credit can we give Bushnell's recollection of the specifics of the test? Should it drive the outcome of a court case? Is this the kind of evidence that is "clear and convincing"? People get false memory all the time. For this reason, oral recollection of dates, especially, as in this case, forty years later, always need to be taken with a grain of salt and triangulated with more sturdy evidence such as documents, both by the historian and the lawyer. In this particular case, there does not seem to be any tangible evidence in the trade press or in relevant archives that such display happened.

The context of the recollection also matters. The historian, and the lawyer, can generally give some credit to sworn court testimonies, because these are made under oath under penalty of perjury—this does not preclude false memory, but at least gives the subject who testifies an incentive to tell the truth to the best of their recollection. Bushnell's under-oath testimony had to do with the date the apparatus was playable (presumably, in his lab), not the date it was placed in a bar. Regarding the undated specifics of the bar test, Bushnell was speaking as part of a paid talk, in front of fellow Silicon Valley geeks, engineers at Google. Typically, in this context, the speaker wants to entertain, and that sometimes means taking some liberties with specific facts. Nolan Bushnell is also known to be a jester and a businessman who often embellishes things. Let's look even closer at the context. He sandwiched his statement regarding the alleged Dutch Goose test between a description of where he hired the model who posed in the first *Computer Space* ad, a then-popular Silicon Valley strip-joint lunch venue named the Brass Rail, and a series of jokes about the intellectual superiority of Silicon Valley engineers

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and intellectual inferiority of beer-bar patrons, all while deriding himself for the poor commercial performance of the game caused by its excessive complexity. The exact quote is as follows:

> The girl in the brochure was a topless dancer at the Brass Rail just down the street. The marketing manager I think had a thing with her but I'm not sure. . . . Anyway, we did our test at the Dutch Goose over by Stanford, it did well, lots of Stanford kids, false positives, . . . [heavy laughs from crowd] but anyway . . . you put it in a beer bar, nobody home, they just couldn't figure out what to do with it [laughs].[28]

Now, even assuming Bushnell's recollection of the specifics of the test are accurate, and that the dating of August 1971, made by videogame history hobbyists rather than Bushnell himself, is also accurate, could this be used in court by National Semiconductor to invalidate Bushnell's *'483* patent?

In the realm of law, if one can't prove that something happened, that thing might as well not have happened. Unless National was able to provide tangible evidence that the alleged Dutch Goose test actually took place before November 24, 1971, then any actual market testing would be irrelevant in the context of that potential litigation. Could they prove it with clear and convincing evidence? Given that the Dutch Goose was located in the heart of Silicon Valley, it is entirely possible that a National employee might have run into *Computer Space* at the time of the test. Would they have remembered, four years later (assuming our litigation took place immediately after the Toy Fair, in 1975), the specific date on which they walked into a bar and saw a game? Even if they did, it is unclear that their testimony would hold in court. After all, people usually go to bars to drink, which makes their subsequent recollection suspect. Perhaps, acting on their employee's tip, National could summon the bar manager to testify. Absent written evidence, perhaps in the form of a contract between the bar and Bushnell, of the date the event allegedly took place, an oral testimony by the bar owner might not prove conclusive. Given the fact that Silicon Valley was not litigious in the early 1970s, and that Bushnell might have been a patron of the bar, it's unclear whether such written document even existed. In many industries and settings, contracts are formalized only with a handshake, which make both the existence and the specifics of the contract hard to prove in court. In the end, these are too many ifs for us, as Atari's pretend lawyer, to give firm advice as to whether National could use the alleged August 1971 Dutch Goose test to invalidate the patent. We would have to give it a "maybe, maybe not,

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probably not, but we can't be sure" answer, which businesspeople love so much. Let us, then, see if other events of "public use" both actually took place before November 24, 1971, and can be proven in a court of law to have taken place.

The first documented demonstration of *Computer Space* took place at the Music Operators of America show in Chicago, in October 1971, one month before the critical date. Although trade shows are not normally open to the general public, courts and commentators alike seem to agree that display of an invention at a trade show qualifies as "public" use under 102(b).[29] In a case wherein a wrought iron table subject of a patent litigation had been displayed at a trade show before the critical date, the court found "no merit in [the inventor's] arguments that the design was not 'in public use' because 'the table was not used in its natural and intended way' because it was 'merely on display,' that display at the trade show was not a public use, and that the showing of the table embodying the design was 'experimental.'"[30] Put an invention on display at a trade show, and you have "public use." The court in this case was elaborating on long-standing precedent that "when the inventor or someone connected to the inventor puts the invention on display or sells it, there is a 'public use.'"[31] Further, when determining whether a display was "public use," the courts have been sensitive to the existence, or absence thereof, of confidentiality agreements between the displayer and the persons observing the display, and whether the observers were allowed to take notes or take photographs within the showroom.[32]

As early as 1881, the US Supreme Court ruled on a case in which "the inventor of an improved women's corset gave his 'intimate friend,' before the critical date, a pair of corset steels that he had made without imposing on his friend any obligation of secrecy or restriction on her use of the steels. The U.S. Supreme Court held that the inventor's acts amounted to a public use that invalidated the corset patent, noting that the inventor's friend 'might have exhibited [the steels] to any person or made other steels of the same kind, and used or sold them without violating any condition or restriction imposed on her by the inventor.'"[33] In the present case, the MOA '71 show targeted manufacturers and operators, rather than the general public.[34] It was no small affair: 2,757 trade members from twenty-two countries were reported in attendance.[35] There is no evidence that attendees were prohibited from taking notes or pictures. In fact, the reporter for *Cash Box* freely roamed the aisles, interviewed exhibitors, and took pictures. Surely,

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the invention itself, that is, the circuit board, was hidden from view, as it was inside the cabinet and therefore not observable by the public. But that is irrelevant since the courts have ruled that there is a public use "even though by its very nature an invention is completely hidden from view as part of a larger machine or article, if the invention is otherwise used in its natural and intended way and the larger machine or article is accessible to the public."[36]

Here, the intended way for the invention to be used was indeed to place it inside of the glossy fiberglass *Computer Space* cabinet and to let passersby interact with the display, experience its magic, as they would in an arcade, a bar, or a store, and as they did during these three October days at the Conrad Hotel in Chicago. Further evidence of the fact that Nutting Associates wanted to use the MOA show to put *Computer Space* in the public realm was that Nolan Bushnell "was on hand at the [Nutting] booth to answer lots of questions on the '*Computer Space*.'"[37] In grand Bushnell bragging fashion (he was a former carnival barker who was famous for knowing "how to work the press and score publicity"),[38] "Nolan sa[id] '*Computer Space*' contains some of the latest in digital engineering techniques . . . employing electronic calculations. . . . Computer calculations register some 25 million calculations per second, according to the laws of physics, says Bushnell, who feels the game could open a whole new generation in amusement games."[39]

What is interesting here is not that *Computer Space* did not contain a computer, despite Bushnell's embellishing claims (and here lies another lesson in taking out-of-court statements with a grain of salt), but that Nutting was working hard to get the word on their new product out and to brag about its inner details, real or alleged. When one of the four units on display failed, the Nutting boys even turned it around and opened it up to reveal its innards as if this had been a planned part of the display. Attendees were allowed to play the game during the three days the show lasted. And *Cash Box* published a picture of the Nutting booth with two of its representatives in the foreground, with the caption, "Nutting Associates president Bill Nutting (left) with [service representative] John Whipps can't seem to get into his own display area with the legions of conventioneers trying to get a chance at their new *Computer Space* game. You'll be hearing lots about the novel unit in weeks and months to come."

A future editor of *RePlay Magazine*, another trade publication launched in 1975, recalls that "you couldn't miss this big, yellow machine with the TV tube. And you couldn't miss Nolan. . . . He was the most excited person I've

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NUTTING ASSOCIATES
Nutting Associates president Bill Nutting (left) with John Whipps can't seem to get into his own display area with the legions of conventioneers trying to get a chance at their new Computer Space game. You'll be hearing lots about the novel unit in weeks and months to come.

Figure 3.2
Cash Box report on the success of the *Computer Space* display. The tall person with the dark bushy hair, facing backward between Nutting and Whipps, looks like it might be Bushnell. *Cash Box*, October 30, 1971, p. 54.

ever seen over the age of six talking about his game. He was so hot about it, I remember backing up, trying to get on my way to see the other booths, and he was still talking!"[40] Clearly, Bushnell intended to publicize his invention at MOA, by making the public aware of it, letting attendees play with it, and answering any questions thrown at him by journalists who would then further publicize the invention. Based on all the above, then, it is very likely that the "public use" bar would have been triggered and recognized as such

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by the courts, had a case between Atari and National Semiconductor been litigated, leading to an invalidation of the patent. Therefore, as Law Student One, we should be inclined to advise Atari not to sue National for patent infringement, lest the *'483* be invalidated through a counterclaim. Let us remember, though, that we cannot provide sound advice without analyzing all four potential statutory bars. Let's move to Level 3.

Level 3: Description in a Printed Publication

A person shall be entitled to a patent unless the invention was "*described in a printed publication*" more than one year prior to the date of the application for patent. The meaning of "description" is once again unique to patent law. It includes an "enabling reference standard," under which the publication must teach a person having ordinary skill in the art (a "PHOSITA" in legal jargon) how to make the invention.[41] The publication has to "anticipate" the patent, and it has do to so in a certain way. Remember that patents are made of "claims." The claims are descriptions that "particularly point out and 'claim' the invention in order to specify the scope of the legal rights afforded to the patent holder."[42] There are five claims in the *'483* patent, which are reproduced below. In order for a publication to "anticipate" a claim (and therefore trigger a bar), it has to disclose each and every element of the claim.[43] Accordingly, "one would test for anticipation by engaging in a rigorous matching exercise, assessing whether each recited element in the claim 1 is found in Reference A."[44] Our law student would have to read each and every claim, as reproduced below, in detail, and assess whether each is described with the same level of detail in a publication printed before the critical date.

One publication was the October 30, 1971, *Cash Box* MOA report, published twenty-six days before the critical date. Could this qualify as a publication? Yes. The printed material does not need to be printed by the inventor himself.[45] Did the publication "anticipate" the invention—that is, did the *Cash Box* article disclose each and every element of the five claims of the *'483*? Remember that the lawyer has to do a line-by-line comparison. If any element recited in the claims is not present in the article, then the article does not anticipate all of the claims and does not trigger a bar. We will save the reader the time (and pain) of conducting such a comparison, and conclude, definitively, that the *Cash Box* article did not anticipate the invention.

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line 22 for adder 17 to utilize in providing the composite video output on line 18.

Having in mind only the foregoing explanation, it is readily evident that the image generated on tube 11 will remain stationary at only a given location in view of the fact that the first counting means including counters 14 and 19 produces pulses 16 and 21 at the same rate as the second counting means including counters 23 and 24.

However, in order to induce a relative change in position of the image across the face of tube 11 along one or more coordinate axes, the count from the horizontal and/or vertical image locating counters 23, 24 is varied by applying a preset selector input as now to be described.

Counter 23 is coupled directly to a preset selector 38 of known type wherein a preset count of 0, 1 or 2 is respectively applied via the leads 39, 41, 42 and, thus, counter 23 can start its count one count behind counter 14 (remembering that counter 14 is preset to a count of 1), even with counter 14, or one count ahead of counter 14 depending upon whether the preset selector has been operated to select input 39, 41 or 42 respectively. A similar preset selector 43 serves to control counter 24 so that it, too, can operate one count behind, or one count ahead, or even with the count generated from the vertical sync generator counter 19.

As shown in the drawing, preset selectors 38 and 43 are respectively shown controlled by manually operated handles 44, 46 whereby a player can, through manual manipulation of the handles 44, 46, control the positioning of an image on tube 11 merely by varying the state of one or both selectors 38, 43.

From the foregoing, it will be readily apparent that there has been provided a simplified readily servicible image control system suitable and adapted for use as an entertainment device or other manually controlled means whereby differences in the counts generated between horizontal and vertical sync pulses on the one hand and the horizontal and vertical image locating counters on the other hand serves to provide selected relative positioning of the images on the screen.

Whenever relative movement of the image on tube 11 is desired to be confined to a single axis, mode control switch 25 is shifted so that armature 25*a* opens the circuit to lead 28 while coupling lead 15 to lead 28 for supplying horizontal sync pulses 16 to counter 24 without any relative displacement between their respective counts. However, the output from the vertical image locating counter 24 is still free to introduce a relative displacement of the image under control of manual preset selector 43.

The attainment of a full count (of 256) by counter 23 serves to gate out the vertical image locating counter 24 via AND gate 37 to adder 17 when counter 24 has attained its full count.

I claim:

1. In a video image control system for causing a video image to be displayed on a video display tube and caused to travel selectively thereon in a plurality of directions, said system including a pulse-generating clock means for generating a continuous stream of signals at a predetermined frequency, first counting means coupled to count said signals and to provide a first output signal upon attainment of a predetermined count and a second output signal upon attainment of a multiple of said predetermined count, a video adder of a type for receiving and combining horizontal sync pulses, vertical sync pulses, and information signals to provide a composite video signal to be coupled to the video display tube, means for supplying said first and second output signals to said adder to function as horizontal and vertical sync pulses respectively, second counting means coupled to count said clock signals and to provide a third output pulse therefrom upon attainment of a given predetermined count and a fourth output pulse upon attainment of a multiple of said given predetermined count, means for generating an information signal in response to the conjoint occurrence of both said given predetermined counts, and means for supplying said information signal to said video adder to provide the composite video signal thereof with an information portion to be displayed, and means for selectively varying said given counts with respect to the first named said predetermined counts to relatively displace the information signal with respect to the positioning of said horizontal and vertical sync pulses thereby moving said image in a direction determined by the relative difference between said predetermined counts and said given counts.

2. In a video image control system according to claim 1 wherein the last named means includes means for selectively varying both of said given counts.

3. In a video image control system according to claim 1 wherein said second counting means includes first and second predetermined counters, and means coupled to said first and second counters serving to preset a selected initial count therein to initiate the count thereof at one of a number of selected counts displaced in time with respect to said predetermined counts of the first named said counting means so as to relatively displace the information signal with respect to the occurrence of said horizontal and vertical sync pulses.

4. In a video image control system for causing a video image to be displayed on a video display tube and caused to travel selectively in various directions thereon, said system including pulse-generating clock means for generating a continuous stream of signals at a predetermined frequency, a first counting means comprising first and second predetermined counters, said first predetermined counter being coupled to receive and count pulses from said clock means to provide a first output signal upon attainment of a predetermined count therein, said second predetermined counter being coupled to count said first output signals and to provide a second output signal upon counting a multiple of said first output signal, a video adder of a type for receiving and combining horizontal sync pulses, vertical sync pulses, and information signals to provide a composite video signal to be coupled to the video display tube, means for supplying said first and second output signals to said adder to function as horizontal and vertical sync pulses respectively, second counting means comprising first and second predetermined counters, said first counter of said second counting means being coupled to count said clock signal to provide a third output signal upon attainment of a predetermined given count, said second counter of said second counting means being coupled to count said third output signals and to provide a fourth output signal upon counting a multiple of said third output signal, means responsive to conjoint occurrence of said third and fourth output signals for generating an information signal, means for supplying said information signal to

Figure 3.3

The claims of the *'483* patent (starting at the bottom of the left column, "I claim": . . .). US Patent No. 3,793,483.

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How about printed sales materials that would have been available on the Nutting booth? Courts have ruled that a sales catalog at an industry trade show is indeed a "printed publication" under Section 102(b).[46] Exhibitors often distribute spec sheets that are detailed enough for potential buyers to analyze the products. Just like a scientific journal article describing with full specifics a new invention, spec sheets, then, have a significant potential to "anticipate" the invention and therefore trigger a bar. Were these available on the Nutting booth? The record is not conclusive as to the presence of such materials, but given that fliers, spec sheets, and documents of that ilk are common for exhibitors to make available at trade shows, and given Bushnell's enthusiastic barking techniques displayed during the show, we can speculate that Nutting likely made available such materials. Let us assume for a second that they existed, and did disclose each and every element of the five claims. The next question is, "Would National have been able to put its hands on such materials, either at the time, or four years after the fact for purposes of litigation?" We don't know. At this point, then, our law student should go back to Atari, and (1) ask whether these documents existed; (2) if they did, ask for copies of them, so a claim-by-claim comparison can be performed. If Atari was able to provide these documents, and if the comparison indicated that the claims were anticipated, then the law student should advise that a bar has been triggered and that the patent would most likely be invalidated in case of litigation. If Atari did not remember, or remembered that these documents existed but did not have copies of them, the law student should advise of the risk that a bar would be triggered if National had put their hands on such documents, and that the claim-by-claim comparison proved anticipation. Lastly, if Atari remembered clearly that no such materials were ever produced, then the law student should conclude that no bar was likely to have been triggered, but still inform Atari of the existence of such bar, just in case Atari had false memory about this.

We still have one more bar level to go through before meeting the Boss.

Level 4: On Sale

In layman's terms, it might be considered that Bushnell had "sold" his invention to Nutting in March 1971, in exchange for 5 percent future sales of *Computer Space*, which would trigger the "on-sale" bar because it happened before the critical date. In legal terms, however, this transaction took the form of a

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license: permission to manufacture and distribute the game. To make things more fun, and to the dismay of most non-lawyers, different bodies of law often have different definitions for the same English word. Under *contract law*, a license is different from a sale. Could it still amount to a "sale" under *patent law*? The answer is both yes and no, which adds a fun twist to our case study and a nice layer of complexity. We are, after all, in Level 4, and things are getting tricky.

On occasion, courts have considered that a license to use a product itself, such as a click-wrap or shrink-wrap software license agreement, is equivalent to a sale. From a contract law standpoint, Microsoft never actually sells you the code of Windows or Office, it merely grants you a license to use the product. From the standpoint of patent law, clicking on the license agreement, or opening the CD-ROM's package, might be equivalent to "a sale." However, this assimilation of a license to a sale, in patent law, is very limited. In particular, courts generally do not consider that a license *to manufacture* a product is equivalent to a sale.[47] In a case involving the assignment, through a license, of all his rights in the famous three-dimensional puzzle that preceded (and would later be infringed by) the Rubik's Cube, by its inventor Larry D. Nichols to the Moleculon Research Corporation, which employed him, in exchange for a share of any proceeds of commercialization of the Cube by Moleculon, the US Court of Appeals for the Federal Circuit held that "an assignment or sale of the rights in the invention and potential patent rights is not a sale of 'the invention' within the meaning of section 102(b)."[48] The same court would later restate this principle that neither "an offer of either (1) production rights in the invention, or of (2) the exclusive right to market the invention . . . involv[e] a sale or an offer to sell the devices themselves."[49] Under these cases, then, the license by Bushnell to Nutting of the right to manufacture *Computer Space*, in contrast to the license by Microsoft of the right to use Windows or Office, does not amount to a sale, and therefore does not trigger the on-sale bar. Note, to add to uncertainty, that the first of the aforementioned cases did not take place until 1986, meaning that Law Student One could not have referred to them when advising Atari in 1975.

So, can we find an actual "sale," in contract law terms, that would actually trigger the on-sale bar under patent law? Perhaps, Nutting Associates actually "sold" units of the game at MOA to distributors? If it had, that would have triggered the Section 102(b) bar. There is no evidence that any sale was made on the Nutting booth. A few videogame history web writers have suggested

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that sales took place there, even quoting Bushnell as saying, "We came back from the show with a good order book."[50] But they do not cite their sources, and, even if they did interview Bushnell, the inventor is known for bragging, and might also just have gotten false memory. Such "evidence" from the hobbyists would likely be dismissed in court as hearsay under rules of civil procedure. Rightfully so, since the same Bushnell did in fact testify under oath that *no* units were sold at the MOA, and that the first units were sold in December 1971 or January 1972.[51] In light of the evidence available to us, then, we must conclude that the "sales" bar was likely not triggered with an actual sale. Or, at the very least, that National could not prove that a sale happened.

But an item does not need to actually be sold for the bar to be triggered. All it needs, under Section 102(b), is to be "on sale," meaning "offered for sale." Was an "offer for sale" made by Nutting at the MOA? Note that the statute again does not define what the criteria for something to be "on sale" actually are, and the resulting endless speculation has led to amusing law journal article titles such as "Deconstructing an 'Offer' to Sell,"[52] "The Leaky Common Law: An 'Offer to Sell' as a Policy Tool in Patent Law and Beyond,"[53] and "The Illusion of 'Offer to Sell' Patent Infringement: When an Offer Is an Offer but Is Not an Offer."[54] In 1998, the US Supreme Court provided guidance by stating that for the on-sale bar to be triggered, "the product must be the subject of a commercial offer for sale" and "the invention must be ready for patenting."[55] For an invention to be on sale, it must be the subject of a commercial offer for sale. This seemingly useless definition is actually useful to lawyers because it implies that the meaning of an offer for sale, under patent law, must be analyzed through the lens of the commercial law of contracts. The courts have further specified that it is the Uniform Commercial Code or, alternatively, the Restatement of Contracts that governs the interpretation of the "on-sale" bar under patent law.[56] The Restatement is a codified extract of US case law essence created by the American Law Institute, a prestigious, private, not-for-profit organization comprising prominent law professors, lawyers, and judges, to help standardize an arcane body of case law. The Restatement of Contracts defines an offer as "the manifestation of willingness to enter into a bargain, so made as to justify another person in understanding that his assent to that bargain is invited and will conclude it."[57] This, again, is a matter of fact, forcing the lawyer to turn back to that arcane body of case law that the Restatement meant to distill into clear guidance.

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Now that the legal complexity behind simple English words has been exposed,[58] let's simplify this a little bit so this level does not drift into a hundred-page, five-hundred footnote law journal article, and let's assume that whenever one makes oneself available to receive a purchase order with the intention that such order will create a binding contract between parties, for the buyer to pay and the seller to sell, even if said order will be fulfilled only at a later date, then that is an offer to sell. To simplify even further, it means that if Nutting was accepting orders for *Computer Space*, to be fulfilled at a later date, then there was an offer to sell that would have triggered the on-sale bar because the MOA '71 show took place before the critical date. Did this happen? Here again, the evidence is fuzzy, but indicates that it was quite possible that the game indeed was on sale at the MOA, even in the absence of tangible evidence in the form of fliers, price sheets, or order forms.[59] For example, Nutting Associates service representative John Whipps attended the show—why would a company go through the expense of sending a service rep to a show, other than to convince attendees that a product, offered and about ready to be put on the production chain ("on sale"), will be properly serviced? Likewise, John Britz, Bally's executive vice president, who attended the MOA and saw *Computer Space*, testified under oath that the game was "then available in the marketplace."[60] These facts tend to show that the game was most likely "on sale," that is, that Nutting availed itself to take orders during the show. Can we say that this evidence is "clear and convincing?" It seems clear and convincing enough that Law Student One should cautiously advise Atari that there would be a serious risk that a court would rule that the on-sale bar was triggered by the MOA events.

The Boss: Providing Legal Advice

Anyone who has ever received a "maybe so, maybe not" type of advice from an attorney has likely been frustrated, but this is the nature of the legal ecosystem. Nothing is ever certain because clueless juries, confused or lazy judges, poor legal skills from one's attorney, a great performance from opposing counsel, or arcane civil procedure rules as to what is admissible in a court of law can come in the way at any time. The justice system, in the civil realm, is there to provide peace by settling matters through esoteric rituals and the performance of a sort of magic, not to find "the absolute truth." A responsible lawyer should not provide advice that purports to predict the future

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with 100 percent accuracy. (We will delve into the decision-making process behind litigation strategies in the next Lawyer's Corner, chapter 7.)

For now, Law Student One needs to provide a formal advice to Atari. We have tediously worked through our maze of facts and case law in precise and systematic ways, always carefully considering pros and cons, arguments and counterarguments, and strengths and weaknesses of evidence. NOW, THEREFORE (as contracts usually begin), based on our analysis, Law Student One can confidently provide Atari with advice along the following shades of likelihood:

> Based on the relevant case law, we can conclude that Bushnell's invention, even if not "sold" at the MOA, was likely "on sale" there; it was most certainly "in public use," if not at the Dutch Goose in Stanford, at least at the MOA; and may have been "described in a printed publication" (although we would need to obtain more factual information from the client on this point to make a more refined assessment), all prior to the critical date of November 24, 1971. There are therefore three different statutory bars of concern, and there is a good chance that at least one of them would be provable by National Semiconductor, should Atari sue them for infringement of the *'483* patent. If even one only of these statutory bars is established in court, the patent would be invalidated. We therefore advise Atari not to sue National, unless it is prepared to shoulder the significant risk that the *'483* patent would be invalidated by a court in the absence of a pre-judgment settlement.

Secret Bonus Level: Jail?

> Oh we've got bad news for you Nolan. The patent's not valid, in fact, and if you assert it you could get in trouble for fraud.[61]
>
> Nolan, we made a little mistake, and you're committing patent fraud, and you might go to jail for that![62]

Such is Al Alcorn's recollection of what Tom Herbert, the partner at Atari's patent law firm, told Nolan Bushnell when delivering his advice not to sue National. If this recollection is accurate, then, from a strictly legal standpoint, such advice seems like quite a stretch. There is no criminal penalty for asserting an existing patent, even if that patent eventually ends up being invalidated through litigation. The forging of letters patents and knowingly passing off counterfeit letters patent are prohibited by Section 497 of US Code Title 18. However, as the US Department of Justice itself noted in 2013, "no published opinions reported an applicable offense under this provision."[63] This law clearly does not apply here, since Bushnell actually was granted a patent and did not forge or counterfeit one. Certainly, Section 292 of US

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Code Title 35 provides penalties for (1) representing that an article is patented when the patent is in fact held by another; (2) marking as patented an article that is not patented; and (3) falsely claiming that a patent application has been made or is pending.[64] Again, none of these provisions apply in the present case, since Bushnell actually did receive a bona fide patent. Asserting an existing patent before it is invalidated by a court is not illegal.

Is it possible that Tom Herbert might have waved the jail flag at the Atari executives to scare them away from attempting to sue National and save Herbert's firm the embarrassment of being exposed for having made a beginner's mistake when filing the patent in the first place, assuming Bushnell had indeed disclosed all of his early activities to his lawyer?[65] After all, while Bushnell was a nobody when he first walked through the door of the reputable firm of Flehr Hohbach Test Albritton & Herbert in 1972, by 1975, Atari had become one of the nascent-Silicon-Valley superstars, featured in the media nationwide, from business publications such as the *Wall Street Journal* and *Business Week* to men's magazines *Oui* and *Playboy*. This is a plausible hypothesis, although we will never know, since the lawyers in question have long passed. In any event, Tom Herbert's statement made a strong impression on Atari executives. The Toy Fair incident was the first and last time that they would try to enforce the *'483* patent.

The tediousness of the above analysis has hopefully given the reader a glimpse of the complexity of patent law—not just on paper, in law books, and precedent, but in its actual practice. As you read the other chapters, keep in mind that the cases being discussed there are distilled to their essence for sake of clarity. Most of the many cases involved deserve their own hundred-page, five-hundred-footnote law journal articles, but the point of this book is to unveil the legal process, twists and turns that have affected the videogame industry in history and to show its complexity, not to provide a legal treatise on arcane points of jurisprudence. The reader interested in plunging into legal caveats will find an extensive literature review on each of these cases in the many endnotes to this book.

The Credits: The Obligatory Legal Disclaimer

Note that while the author of this book is an attorney, he is not currently practicing, and all "advice" presented in this volume is as a figure of speech only. Nothing in this book constitutes, nor should be construed as, legal advice.

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Intermission: When Reverse Engineering and Legal Engineering Get Entangled in a Never-Ending Dance

The next three chapters can be read independently, as they present three distinct storylines. However, their sequence is also a whole. As a whole, they show that engineering and legal engineering are entangled in a never-ending dance.

By *legal engineering*, I mean the craft of creating novel legal arguments in response to changes in an environment—in this case, technological changes. This dance between technological innovation and legal innovation is complex and always in flux.

In chapter 4, we will see how technological and business innovations in 1979 disrupted the existing industrial arrangement in the console industry, which revolved on a bundled console-plus-cartridge business model, in which the console manufacturer was the one developing cartridges for its machine. When this model was disrupted by companies that unbundled the production of cartridges from that of consoles, the incumbent, Atari, turned to legal arguments to prevent the shift. These failed.

A few years later, the new dominant console manufacturers, Nintendo and Sega, turned to engineering as response to third-party game developers, by creating lock-out chips that prevented unlicensed software from working on their machines. Engineers responded to engineers by breaking these locks through the process of reverse engineering (chapter 5).

It was again the lawyers turn to take the lead in this fight. Through legal engineering, they crafted new arguments that aimed at banning the practice of reverse engineering (chapter 6).

Let's start with the genesis: the hotly contested shift from in-house production of games by console manufacturers to the third-party-developer model.

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4 You're Just a Bunch of Towel Designers!! The Genesis of the Third-Party Videogame Software Industry

The examination of the genesis of the third-party videogame software industry is the first act in our engineering-law-engineering-law dance. We first see how the peculiar legal infrastructure of the State of California actively supported the disruption of the bundled console-plus-cartridge business model. Then, we observe the inability of existing legal principles to hinder this creative destruction.[1] The shift led to an explosion of third-party games, followed by a market crash in 1983, which would subsequently prompt an engineering reaction to a legal and business problem.

The Game That Never Was: *Sharknado* for the Atari VCS

In November 2014, I came across a post on AtariAge, a bulletin board for Atari fans, announcing a homebrew release of a brand-new game for the old Atari VCS, *Sharknado*. The game was based on the legendary eponymous B-movie featuring Tara Reid and Ian Ziering saving the people of Los Angeles from a freak attack of giant sharks falling from the sky.[2] The game was offered either as a stand-alone cartridge or as a deluxe package that included a shark tooth necklace and a photocopy of the game's author's very own Tara Reid autograph. Being a fan of both the Atari VCS and the movie, I of course placed a preorder for the game. Two months later, unfortunately, the game's author, who is known in Atari homebrewers' circles under the handle neotokeo2001, informed me that the game was no longer for sale, as he had received a cease-and-desist letter from Universal Studios for infringement of the movie's trademark.[3] It was not the first time Universal had gone after game creators. In 1984, the studio had sued Nintendo over the game *Donkey Kong*, alleging it infringed on its trademark for the film character *King Kong*.[4] Universal lost.

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SHARKNADO (Atari 2600) Limited Edition Now Available! - Marketplace
SHARKNADO (Atari 2600) Limited Edition Now
SHARKNADO (Atari 2600) Limited Edition Now Available! - posted in Marketplace: SHARKNADO for the ATARI 2600 RESERVE YOUR COPY
View on atarlage.com
Preview by Yahoo

Figure 4.1
An original ad for *Sharknado* (screen capture).

But, unlike the Japanese firm, neotokeo2001 had neither the time nor the money to hire star lawyers, and so he ceased and desisted, and the game was never distributed.[5] Subsequently, neotokeo2001 changed the name of the game to *Hunger Shark* and kept the software and the gameplay untouched, as they did not infringe on anyone's IP. If the old Atari, Inc., had still been around, the Silicon Valley firm could not have prevented the release. It was not for lack of trying. In 1980, Atari sued Activision, the first third-party videogame software firm, in hopes not of extracting money but of shutting down Activision's operation and keeping full control over the VCS console-plus-cartridge combo. Atari failed. This paved the way for today's paradigm, in which hardware and software firms are different entities. How did this happen? What legal forces were at play that helped reshape the market from a bundled to an unbundled industrial structure?

You're Just a Bunch of Towel Designers!!

The third-party-developer videogame industry all started with an insult: "You're just a bunch of towel designers!!" It was hurled by Ray Kassar, the man Warner had installed at the helm of the Atari ship to replace Nolan Bushnell, at a handful of game designers who had come to argue for better recognition of their art and better financial terms. As Lon Allan, Atari's first general counsel, recalls, Kassar was

> a quintessential Midtown Manhattan person. When he came down here . . . [he] came to work with his Brioni suits and white shirts, brought out a secretary from

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> New York City because he wanted a New York secretary. His door was closed. You had to make an appointment. And people like Alcorn, Bristow, or me, who walked around like this [points to his casual outfit]—he couldn't listen to people who didn't dress, much less who didn't behave, like New Yorkers, in terms of hierarchy and who wouldn't make an appointment and walk in his office and stand up until we were asked to seat. I mean, that just wasn't the culture here. . . . [He] was an absolute disaster here because he didn't respect people who came to work in blue jeans and didn't call him "Mr. Kassar."[6]

Kassar, indeed, was a disaster when dealing with Atari executives. A leading industry publication wrote in 1983 that he "ran Atari like an emperor" and created a "destructive atmosphere." "An Atari executive's standing depended not on how well he performed; it depended on whether he was in or out of Kassar's favor. . . . There were, according to one former executive's count, some 17 different presidents of the coin-operated, consumer and computer divisions in less than three years. . . . Decisions were made on the basis of who had talked to Kassar last, which led to considerable uneasiness, not to say paranoia, among executives."[7] For Bushnell (Atari cofounder), "it became a monarchy."[8] For Gene Lipkin (Atari VP of marketing), Kassar had "terrible people skills."[9] As summed up by Larry Kaplan (one of Atari's original game designers), "Nolan [Bushnell] is one extreme, Kassar is the other."[10] Even Wall Street analysts, accustomed to men in Brioni suits, were alarmed by the high rate of executive turnover.[11] Worse, Kassar's ineptitude extended to his relationships with the game designers, the creative forces at Atari: "Ray had no feeling for the products, no feeling for engineers, and he really didn't have a feeling for the market. Ray didn't play videogames. He didn't even have the equipment in his office."[12]

In a business based on innovation and, therefore, on creativity, that would prove to be a problem. As Allan put it, "The mojo was gone. The mojo was gone and in a creative business, if you lose that, you know . . ."[13] Atarians mocked Kassar by calling him "the towel salesman," a reference to his previous career as an executive in the linen business.[14] Indeed, industry analysts observed, "from his earliest days at Atari, Ray Kassar thought that running a high-tech business was just like running a textile company. Textiles are a mature, stable industry. Because the market neither grows nor shrinks much in any one year, textiles are a 'marketing game'—competitors slug it out for a share of the market, coming up with fresh advertising strategies and new designs for old products like towels. High-tech is an engineering-driven

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industry where you must invent and reinvent, or die. . . . Kassar did not understand what engineers did, or how important a role they played at Atari."[15] As Alcorn summarizes it, in this industry, "if you don't disrupt yourself, you'll be disrupted by someone else."[16]

What the engineers wanted was freedom to create, preferably in an independent design group.[17] They wanted the operating systems of new products to follow open design principles, while Atari's management thought the golden goose would be better protected by closed systems.[18] And they wanted recognition and better compensation. They saw the way Warner, Atari's parent company, treated the movie and music performers in its stable—as stars credited for their work, and who received royalties on sales—when a record or a movie succeeded, they made bank. In contrast, Atari's model was based on the toy (and linen) industry: no recognition, and a flat salary.[19]

One day in early 1979, Alan Miller, one of Atari's game designers, joined by fellow programmers David Crane, Larry Kaplan, and Bob Whitehead, approached management to renegotiate their contract. That move was triggered by the realization that, out of a team of thirty-five designers, the four of them had contributed 60 percent of the previous year's revenue with the games they had created.[20] As Crane recalls, "When I saw a memo that the games for which I was 100 percent responsible had generated over $20 million in revenues, I was one of the people wondering why I was working in complete anonymity for a $20,000 salary."[21] And, as they could have expected, "Kassar called us towel designers," Kaplan recalls. "He said, 'I've dealt with your kind before. You're a dime a dozen. You're not unique. Anybody can do a cartridge.'"[22] As Crane remembers it, "Ray Kassar looked us in the eye and said, 'You are no more important to Atari than the person on the assembly line who puts the cartridges in the box.' After that it was a pretty easy decision to leave."[23] Kassar subsequently continued digging himself (and the company) into a hole. In another incident, he called the remaining engineers "high-strung prima donnas." To which they replied by making and wearing T-shirts bearing the words, "I'm another high-strung prima donna from Atari."[24]

Starting Activision: Lawyers as Matchmakers, and the Unenforceability of Non-Competes in California

On account of the situation at Atari, in the summer and fall of 1979, Miller, Crane, Kaplan, and Whitehead, who became known as the "Gang of Four,"

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left Warner's company to form Activision, a company that would give programmers the freedom to create, and reward them both financially and with name recognition (pictures of designers appeared inside the cartridge packages, leading to fan mail of around seven thousand letters a week).[25]

Atari made no effort to retain the four: "There was no bomb. There wasn't even a murmur. We made no announcement that we were leaving to start a competitor. . . . Our departure wasn't that unusual. Several of Atari's best engineers had left or were leaving," Miller recalls.[26]

Non-Competes Are Generally Not Enforceable in the State of California

Even if Kassar had immediately understood the significance of the departure and had tried to prevent the engineers from forming a competing venture, there is nothing Atari could have done about it. This has to do with California law. In California, non-compete clauses, if inserted in employment contracts, are unenforceable. This rule dates all the way back to 1872, when the newly enacted California Civil Code provided that "every contract by which anyone is restrained from exercising a lawful trade or business of any kind . . . is to that extent void."[27] In this context, a non-compete, also called covenant not-to-compete, is a clause inserted into an employment agreement that prohibits an employee who leaves a company to go work for a competitor for a certain period of time and, usually, within a certain geographic area.

There are a few exceptions to unenforceability under California law.[28] For example, when a company is sold, shareholders who are also key employees can be forced to remain in the company for a certain period of time, or at least not to compete with the company they have just sold, something Bushnell and Alcorn call the "beach clause" (that is, it is understood that the key employee will not compete and will continue to be paid for a certain period of time, which they will often spend at the beach).[29] A sports enthusiast would call it being "on the inactive roster."[30] These clauses are enforceable in the State of California.[31] Both Bushnell and Alcorn would end up breaking theirs. Bushnell was sued by Atari and had to stop his competing venture under the settlement.[32]

The rank-and-file programmers, including the Gang of Four, generally did not have such clauses in their contracts.[33] If they had had a generic non-compete, because they were not key employees/shareholders, such clauses would not have been enforceable anyway. This, from a

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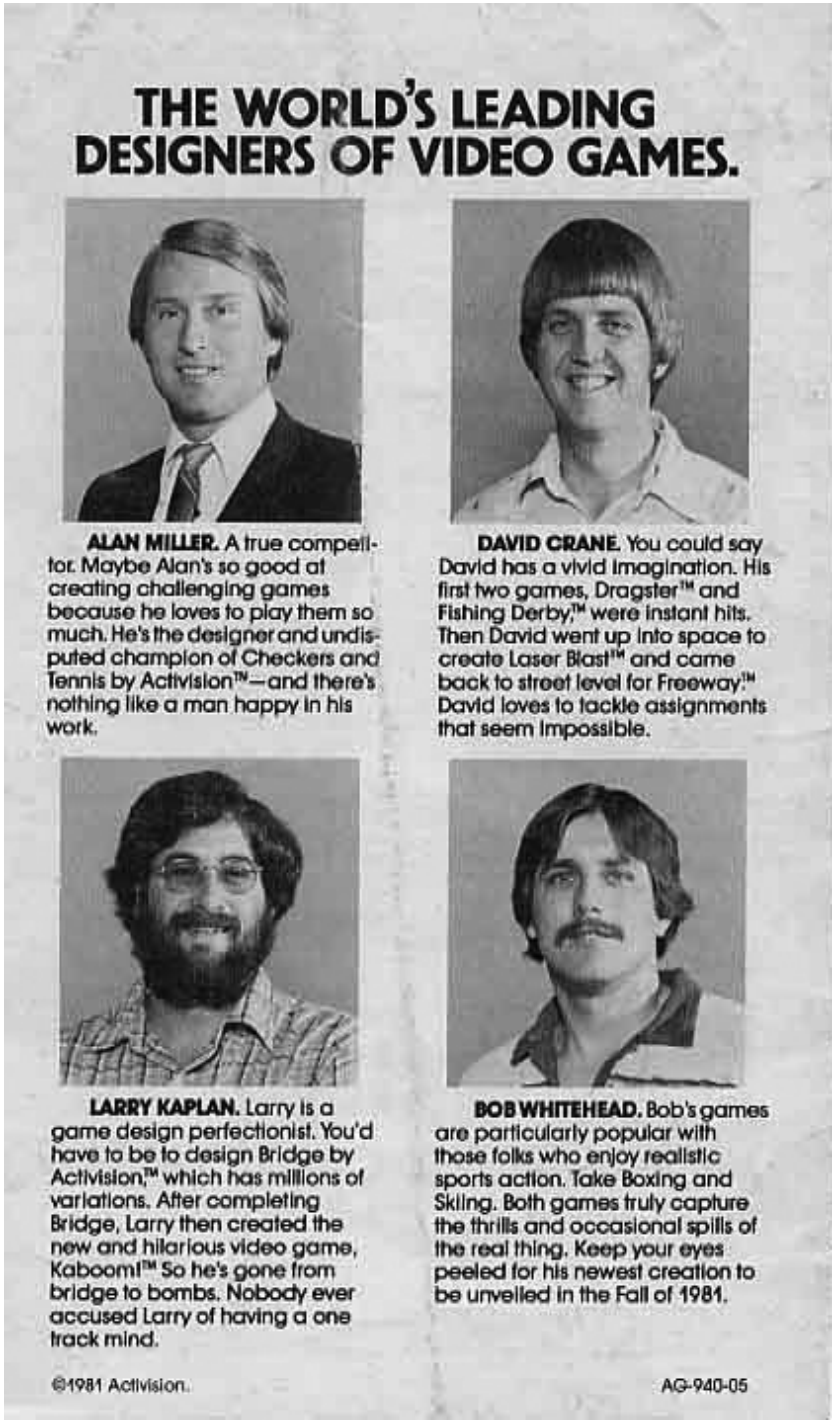
THE WORLD'S LEADING DESIGNERS OF VIDEO GAMES.
ALAN MILLER. A true competitor. Maybe Alan's so good at creating challenging games because he loves to play them so much. He's the designer and undisputed champion of Checkers and Tennis by Activision™—and there's nothing like a man happy in his work.
DAVID CRANE. You could say David has a vivid imagination. His first two games, Dragster™ and Fishing Derby,™ were instant hits. Then David went up into space to create Laser Blast™ and came back to street level for Freeway.™ David loves to tackle assignments that seem impossible.
LARRY KAPLAN. Larry is a game design perfectionist. You'd have to be to design Bridge by Activision,™ which has millions of variations. After completing Bridge, Larry then created the new and hilarious video game, Kaboom!™ So he's gone from bridge to bombs. Nobody ever accused Larry of having a one track mind.
BOB WHITEHEAD. Bob's games are particularly popular with those folks who enjoy realistic sports action. Take Boxing and Skiing. Both games truly capture the thrills and occasional spills of the real thing. Keep your eyes peeled for his newest creation to be unveiled in the Fall of 1981.
©1981 Activision.
AG-940-05

Figure 4.2
The Gang of Four is prominently featured in Activision's 1981 catalog. *Activision Videogame Cartridge Catalog* (1981).

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legal standpoint, is what enabled them to walk. From a general standpoint, the unenforceability of non-competes has historically been a cornerstone of the development of Silicon Valley because it enabled innovators stuck within rigid corporate structures to move to their next project in more flexible environments, and generally encouraged mobility from one company to another.[34]

The Lawyer as a Matchmaker

Activision, Inc., was incorporated on October 1, 1979.[35] Before that happened, the Gang of Four had to lawyer up and find venture capital money. Upon receiving friendly advice from Joe Decuir, another Atari defector who had left for Amiga, they turned to the legendary Silicon Valley firm of Wilson Sonsini Goodrich & Rosati. It was the same firm that had represented Don Valentine and his venture capital firm, Sequoia Capital, in the first and only round of VC financing of Atari in 1975. At Wilson Sonsini, the four were assigned a young lawyer named Art Schneiderman. In the first meeting, Alan Miller recalls, "they frankly told us that in order to attract venture capital, we would need to have an experienced management person on board."[36] Where to find such person, and where to find venture capital? The law firm would take care of it. Meanwhile, one Jim Levy, an executive with GRT Corporation, in the prerecorded music tape business, had been looking at developing a new company to publish computer software on tape. He also had retained Art Schneiderman at Wilson Sonsini to make contacts on his behalf in the venture capital community and structure a deal.[37]

When the Gang of Four walked in his office, Schneiderman connected the dots. Around the second week of June 1979, Levy got a call from Schneiderman: "I have your design team in my office," he said.[38] "And he put us together, I as the businessman and they as the creative people."[39] The five hit it off. The division of labor, as well as the corporate spirit, was quickly established, and stood in stark contrast with Kassar's Atari. In Levy's recollection, "these four gentlemen were engineers and creative people and labored in the labs and only had the faintest idea of what might be going on in the marketplace. . . . I have been quoted as saying I felt like I started a record label with Barbra Streisand, Neil Diamond and the Rolling Stones as my first artists. . . . I think what I probably literally said is: You guys know what you're doing. I know what I'm doing. You do what you do best, I will do what I do

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best, and at some point we will get together and discuss what we are doing."[40] So, in August 1979, Levy wrote a business plan, which he took to Bill Draper, a cofounder of Sutter Hill Ventures, one of the original Silicon Valley VCs, a firm Levy himself had been introduced to by Schneiderman. Things moved fast: the venture, then called "Video Computer Arts" (the name "Activision" was not generated until late September, shortly before incorporating),[41] received a $700,000 commitment from Sutter Hill[42] and was incorporated on October 1.

This story exemplifies the importance of the firm of Wilson Sonsini Goodrich & Rosati in Silicon Valley, which is such that it might as well be referred to as "the sacrosanct Sistine Chapel of Silicon Valley law."[43] Here, we observe the Silicon Valley attorney in an unexpected role. Not the negotiator, not the intellectual property advisor, not the litigator, but the gatekeeper and matchmaker.[44] Matchmaker because the firm uses its Rolodex to introduce creative geniuses, operation experts, savvy business leaders, and venture capitalists to each other in the formative days of a start-up; gatekeeper because the firm will put in contact only people it has vetted. Being introduced by Larry Sonsini in particular has always been a golden ticket to securing VC financing.

The original goal was for Activision to release two titles in August of 1980 and two in October of 1980. Ahead of target, they succeeded in releasing four in July of that year.[45] And, although Ray Kassar had not immediately perceived the significance of the departure of the four "towel designers," he quickly corrected course. Only four months after Activision's incorporation, on January 31, 1980, Ray Kassar sent a threatening letter in which "he alerted us to the existence of certain Atari patents and warned us if we abused any of their trade secrets or did anything that they felt was an infringement of their rights that they would pursue us," Levy recalls.[46] That very same day, after consulting with Schneiderman and Activision's patent attorneys (the firm of Flehr Hohbach Test Albritton & Herbert, which, ironically, was none other than Atari's original patent firm; we return to this incestuous relationship in chapter 10), Levy wrote Kassar back with "an offer to try and discuss matters."[47] Atari did not accept, or even acknowledge, the olive branch and filed suit in May, demanding $20 million in damages.[48]

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The Lawsuit . . . and Settlement

The lawsuit charged Atari and the Gang of Four of trademark infringement and theft of trade secrets. It was not about the $20 million. It was a business strategy designed by Warner (Goliath) to bully Activision (David) into submission and quash anybody else's dream to unbundle the integrated console-plus-cartridge model.

Atari went at it very aggressively. Even before the lawsuit was filed, they put out ads in the Winter Las Vegas Consumer Electronics Show's program that January, implicitly targeting Activision and threatening all hell to anyone having even a hint of an intent to start developing games for the VCS.[49] "They're seeking to win victory in court that they can no longer win in the market," Arnold Greenberg, president of Coleco, a competitor of Atari in the hardware market, said of the lawsuit.[50] Whitehead agreed: "Lawsuits are used by big companies to limit competition even though its legal merits are few. And unfortunately, it works."[51]

It didn't work for the big company this time around. Activision had come prepared and did not back off. "Before we started the company, we checked with lawyers to make sure that it was legal to do what we were talking about," Crane says. "We actually budgeted for a lawsuit when we went to a venture capitalist and got backing."[52] A year and a half later, in December 1981, Atari settled the case. Still, Warner must have done a number on the Gang of Four, because the content of the settlement has been shrouded in utter secrecy ever since.

Settlements are typically subject to confidentiality clauses, and this makes sense. Sometimes, someone settles because they know they will lose in court. Having unfavorable terms of a settlement subsequently revealed would confirm a weak legal position in the eyes of the industry, making potential future litigation much more difficult to navigate. Having the terms of the settlement revealed would give other players in the industry a sense of what the parties involved in the settlement are willing to settle for, thereby weakening their future bargaining position. Sometimes, a party confident that it will win in court will settle anyway because it realizes a settlement will end up being much less costly than litigation, a very expensive enterprise. It does make sense, then, that Atari fought tooth and nail to keep the settlement confidential. The document was sealed by a court order. This enabled Skip Paul, who had been appointed as Warner-Atari's general counsel, replacing Lon Allan,

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InfoWorld

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Huggy, the Wireless Puppet

By Maggie Canon

PALO ALTO, Ca.—Huggable, yes; a robot, maybe: Huggy, essentially an electronic puppet, was given an honorary membership in the U.S. Robotics Society here to promote continuing interest in robotics.

The United States Robotics Society (USRS) is offering free honorary memberships to all working robots. A nonprofit organization, the USRS monitors and records progress in the fields of artificial intelligence and robotics through a monthly newsletter, ROVOX.

Huggy, a product of Advanced Robotics Corporation, is cute and vivacious. His primary responsibility is

Atari Sues to k.o. Competition

SAN FRANCISCO, Ca.—Atari, Inc., has filed suit here against Activision, Inc., of Sunnyvale, California, charging trademark violations and theft of trade secrets. Atari claims that Activision is using trade secrets which are the property of Atari in the development and production of game cartridges for the Atari video game system.

When contacted by *InfoWorld*, Jim Levy, president of Activision, said that he was "surprised and mystified by the suit." Although the founders of Activision include four former Atari employees, he stated that no Atari trade secrets were being used.

Levy noted that he had made an offer to Atari to appoint a neutral third party to review all of Activision's development operations to insure that no information proprietary to Atari was in use. But Activision's offer was ignored, and the suit was subsequently filed by Atari.

Levy expressed consternation that Atari did not want to encourage third party software vendors for the Atari game system. "Other manufacturers have been approaching us, asking us to develop games for their systems, but Atari seems to want to be the only source for Atari-compatible cartridges," he said.

The trademark violation charged by Atari involves the name DRAG STRIP, which was the name given to a prototype Activision game. Levi said that the name was changed to DRAGSTER when the Atari objection surfaced and before any production versions were released. "They could have settled that one with a phone call," he said. "They didn't need to go to court. It isn't worth fighting over."

When contacted by *InfoWorld*, Ginny Juhnke of Atari said only that the suit was still in the discovery stage, and that Atari had no further comment. ■

The Activision design team. (Left to right) Bob Whitehead, David Crane, Alan Miller (upper right), and Larry Kaplan.

Figure 4.3
InfoWorld announces the lawsuit, August 4, 1980.

to keep the terms confidential even years later, when Magnavox was suing Activision and was trying to obtain a copy of the Atari-Activision settlement as part of its own discovery process.[53]

What is unusual, however, is the degree of secrecy *still* surrounding the document. Most confidential documents of historical significance eventually make their way into public archives, or are leaked to researchers by individuals who hold copies. I obtained most of the formerly confidential legal documents discussed in this book this way. After forty years, confidentiality agreements seldom hold in practice. The Atari-Activision settlement is different. It does not seem to have made its way from bankers' boxes stored in an individual's attic into any public archive or otherwise have been leaked.

I have interviewed several individuals who would have been privy to the document at the time. When asked to disclose its terms, by myself or by

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others who have also sought answers, those who actually responded have declined to discuss the agreement with what feels like the fear of suffering retribution from a mob boss.

When I asked David Crane about it, after confirming that the terms of the settlement were confidential, he wrote me: "When the dust settled I was asked if I wanted to know the terms of the settlement, thus committing myself to the possible penalties built into the confidentiality agreement. After thinking about it I declined—figuring that I couldn't divulge what I didn't know."[54] In a 2017 interview, Mike Albaugh, who had designed *Drag Race* for Atari's coin-op division, stated, "I can only answer in vague and well-publicized terms. Lawsuits went both ways. It is my understanding that the terms of the settlement prohibit disclosure of the terms of the settlement (first rule of fight club). I can confidently state that nearly everything that has been published about that case is false, but since 'those that know can't tell, and those that tell don't know,' there is little I can say, and less that I can say in public without risking further problems. For years I had two words clipped from a newspaper headline taped to the top of my monitor: 'Avoid Litigation.'"[55] When I pressed Albaugh about it in 2019, he answered that he didn't know the terms of the settlement, but that he was told at the time not to talk about it anyway. And, he concluded, "so anyone who talked about it either lied or broke the law."[56]

The press at the time and, now, many hobbyist-maintained blogs and books that purport to be authoritative histories have suggested and continue to suggest that Activision agreed to pay royalties to Atari. That story does not hold. None of these claims are substantiated. And if Activision paid, why didn't Atari then sue all the other third-party developers to obtain royalty payments from them as well? Atari would have, and they didn't. Albaugh had remarked, "Those that tell don't know."[57] Jim Levy confirmed directly to me that, in addition to the lawyers involved and the boards of directors, "no more than two or three people at Activision" [including himself] know what's in the settlement. So, he said, "I think people are making things up."[58]

Alan Miller had declared, "There was no basis for [Atari's] claims and it was eventually settled for nothing."[59] I spoke with Jim Levy about the settlement. He is the person who has come the closest to disclosing the terms of the settlement without actually disclosing them. He prefaced our conversation with the following disclaimer: "I cannot speak specifically of what was in the

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settlement agreement because there was a confidentiality clause. Anyway, I can't exactly remember the terms of the settlement, and I can't disclose what I can't remember." After stressing a second time that he was not speaking from his memory of what was in the agreement, but rather from his memory of conversations with representatives of Atari prior to settlement and his belief about their desire for secrecy, he also stated that it was highly unlikely that Activision would have paid anything to Atari, and he offered to provide useful context to understand the settlement:

> They [Atari] approached us to settle. . . . They wanted dollars, and future royalty payments. . . . We were not inclined to do either. . . . The lawsuit was going nowhere because of all the other [third-party game software firms] that were starting. . . . Atari thought that if they got any money out of Activision, they could go after the other, which is why it took so long before they settled [19 months]. . . . In the end, we won that battle. . . . The loser didn't want us to talk about it, so the non-disclosure clause was pushed by them! There would not have been a non-disclosure if we had paid, instead, Atari would be talking about it. But they didn't want people to know because they didn't get what they wanted.[60]

We can safely conclude that Activision paying royalties to Atari is just an unsubstantiated urban legend, a story that does not make sense when confronted with the available facts. One can hope that the actual settlement agreement will eventually be leaked so the actual terms can be documented. Meanwhile, if anyone has contrary evidence, they should present it rather than regurgitate hearsay.

Knowing the exact terms of the settlement doesn't actually matter for our purpose. What matters is that it is accepted, with good reason, that the settlement opened the floodgates for third-party software manufacturing. Atari was forced into it because it knew that it was going to lose the case. Indeed, when a second wave of Atari defectors formed Imagic, the second third-party company to make games for the VCS, followed by about a hundred in the following two years,[61] Atari left them alone.[62] Five years later, in the *Sega v. Accolade* litigation, which we discuss in chapter 6, courts made clear that for a third-party to manufacture games compatible with a console it does not itself manufacture generally is a legitimate endeavor.

There are, of course, exceptions. We've seen in chapter 2 that Magnavox could preclude Activision from making ball-and-paddle games for the Atari VCS, because Magnavox/Sanders had a specific patent on such games. But that patent did not extend to any console as a whole. And Atari did not have a patent on the VCS as a whole.

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Atari and Activision Bury Hatchet
The long-standing feud between Atari and Activision, the Santa Clara software producers, has finally reached an amicable, out-of-court settlement. The original bones of contention concerned Activision's title **Dragster** and the very concept of producing and selling Atari-compatible software.
In any case, with several new companies, such as Imagic and Games by Apollo, already producing VCS software and an entire herd of manufacturers poised to jump on the VCS bandwagon, the original litigants agreed to a long term licensing arrangement that allows Activision to go ahead with the Sunnyvale game titans' full approval and leaves unsettled the question of VCS-software licensing.
ATARI
ACTIVISION

Figure 4.4
Electronic Games magazine announces the Atari-Activision settlement, June 1982. *Electronic Games*, June 1982, p. 9.

We now know that the legal infrastructure ecosystem of Silicon Valley *supported* the creation of Activision and the unbundling of the previously integrated console-plus-cartridge model. Are there legal principles that could have *hindered* Activision's efforts?

Atari's Ineffective Legal Arguments

Atari brought arguments in four legal realms: trademarks, copyrights, patents, and breach of confidentiality/theft of trade secrets. Let's observe how they

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played out in the Activision case and, more importantly, how their ineffectiveness influenced the nascent third-party software industry as a whole in the years following the settlement.

Trademark Infringement

A trademark is an identifier for a product or service, which helps distinguish it from its competition. Trademarks can take the form of words, phrases, logos, or even "dresses" (think of the shape of the Coca-Cola bottle, or the red sole of a Louboutin shoe). In the US, trademarks are protected under the Lanham Act of 1946. For maximum protection, trademarks should actively be registered with the federal government.[63] Upon examination of an application, the United States Patent and Trademark Office (USPTO) will decline to issue a trademark if a "likelihood of confusion" exists between the mark in the application and a previously registered mark.[64] Likewise, a party that owns a trademark can obtain damages in litigation for trademark infringement from a party that creates a mark that is likely to confuse the public as to the origin of a good or service.[65]

The luxury goods market, most notably, has forever been inundated with cheap knockoffs of bags, shoes, shirts, and the like, bearing logos that closely resemble the original.[66] Sometimes, customers buys the knockoff because the presence of a logo resembling the original makes them think that the counterfeit item is original; sometimes the customer buys it knowing full well it is a fake, but in the hope they will confuse their friends and colleagues and get some accolades: "Oooh, what a beautiful [*insert brand name here*] shirt you have." In both cases, the resemblance between the registered logo and the knockoff causes confusion, and, in the event of criminal prosecution and/or civil litigation, that confusion justifies a ruling of counterfeiting and/or trademark infringement ("counterfeiting" refers to the criminal component, while "infringement" is the civil component—all counterfeiting is infringement, but not all infringements rise to being a criminal infraction).[67]

In the case of videogames, the most famous case involving a civil claim of trademark infringement is perhaps *Universal City Studios v. Nintendo*, wherein the studio claimed to own a trademark to the film character of *King Kong* and sued Nintendo for trademark infringement over its smash hit *Donkey Kong*.[68] The court ruled that the names Kong and King Kong actually were in the public domain, but that even if Universal had had a trademark over the film character, "Donkey Kong" could not possibly infringe on it since there was

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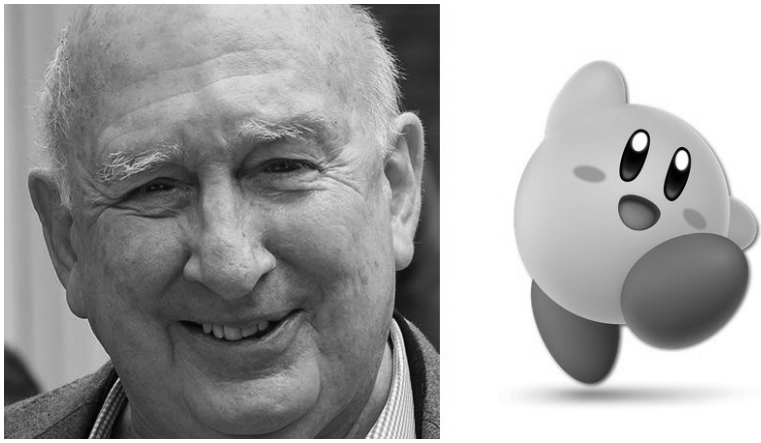

Figure 4.5
Left: John Kirby. Right: Nintendo's character Kirby.

no risk of confusion of the two by the public: "The two properties have nothing in common but a gorilla, a captive woman, a male rescuer, and a building scenario. Universal has not introduced any evidence indicating actual consumer confusion." In fact, in a survey conducted by Universal itself in an attempt to prove confusion, "when the participants were asked 'As far as you know, who makes Donkey Kong?' not one suggested Universal or the makers of the King Kong movies."[69] Nintendo was so grateful to its lead lawyer, John Kirby, that it bought him "a 27-foot sailboat, christened 'Donkey Kong,' and humorously granted the attorney the exclusive right to use the name in perpetuity, but just for sailboats."[70] Nintendo even subsequently named the lead character in its Kirby game series after the attorney.[71] Talk about lawyers shaping the videogame industry!

In the case of *Atari v. Activision*, could Atari have prevailed on trademark infringement grounds? According to Levy, Atari first took umbrage at the name *Drag Strip*, a name reminiscent of *Drag Race*, a 1977 arcade game released by Atari-controlled Kee Games.[72] It is unlikely that anyone would have confused "strip" for "race." Real issues of infringement occur in much closer cases. An example given by the USPTO is of two marks that, although spelled differently, sound alike: If "T. Markey" has been issued as a trademark, then "Tee Marqee" will not be granted by the government.[73] Upon Atari objecting, Activision, just to be on the safe side, changed the name to *Dragster* "before any production versions were released. 'They could have settled that one

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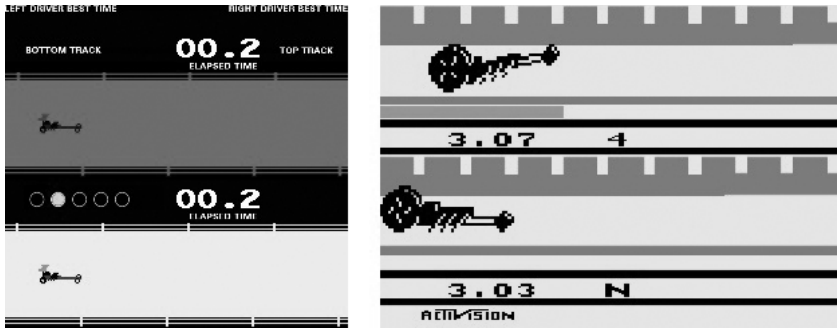

Figure 4.6
Left: screenshot of Atari's coin-op *Drag Race*, by Mike Albaugh. Right: screenshot of Activision's *Dragster* for Atari VCS, by David Crane. Notice the prominent Activision logo at the bottom left of the screen.

with a phone call,' Levy said. 'They didn't need to go to court. It isn't worth fighting over.'"[74] Clearly, Dragster and Drag Race are unlikely to be confused with each other. In fact, while the judicial proceedings were going on, Activision applied for, and was granted, the mark Dragster by the USPTO, proving that the agency did not feel there was any risk of confusion between the two names![75] And, since Activision's whole spiel was that they were better than Atari, the company also actively differentiated the origin of its game from Atari's, thereby minimizing the risk of confusion for the public, in particular by prominently displaying its logo both on the box and in the gameplay itself. Atari's trademark claim, therefore, was unlikely to succeed.

Copyright Infringement

The US Constitution grants Congress the power "to promote the Progress of Science . . . by securing for limited Times to Authors . . . the exclusive Right to their . . . Writings."[76] Under the 1909 Copyright Act, then, Congress granted authors a monopoly over their "writings."[77] Based on this statute, and "unsure of how to classify software as a creative work," starting in 1964, "the Copyright Office registered all computer programs as books or pamphlets and offered them the protections normally afforded to literary works."[78] The 1976 act expanded the reach of copyright protection to "original works of authorship," not just "writings," and explicitly included audiovisual works.[79]

From the early days of the videogame industry appeared a plethora of "pirated," "counterfeited" games, that is, direct copies of hardware boards

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Figure 4.7
In dramatic fashion, Rock-Ola "hereby proclaims" and gives notice that it will seek prosecution of counterfeiters of its arcade videogames. *Vending Times*, December 1981.

or of ROM cartridges intended by the pirates to pass as originals. This is straightforward copyright infringement, which does not raise complicated legal issues (unlike the actual *enforcement* of US court rulings, made complicated by the fact that these practices often involved international trade and conflicts in intellectual property law regimes and practices in the countries where these counterfeit products were produced, a situation similar to that of counterfeit luxury goods today—we return to this international aspect in chapter 9). Trade magazines in the late 1970s and early 1980s are filled with reports of courts cases in favor of copyright owners and with advertisements by legitimate game companies threatening to sue pirates.

But none of this could have been used by Atari against Activision, since Activision was creating its own games.

Clones of games present a much trickier legal issue that do straight copies. Atari took offense at Activision's *Dragster*, alleging *trademark* infringement. At that time, Atari was also very active in court on *copyright* grounds, suing not just people counterfeiting its board or copying its ROMs, but also creators of *new* games *inspired* by existing ones: clones.

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PIRACY: THIS GAME IS OVER.

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Unfortunately, however, some companies and individuals have copied ATARI games in an attempt to reap undeserved profits from games that they did not develop. ATARI must protect its investment so that we can continue to invest in the development of new and better games. Accordingly, ATARI gives warning to both the intentional pirate and to the individuals simply unaware of the copyright laws that ATARI registers the audiovisual works associated with its games with the Library of Congress and considers its games proprietary. ATARI will protect its rights by vigorously enforcing these copyrights and by taking the appropriate action against unauthorized entities who reproduce or adapt substantial copies of ATARI games, regardless of what computer or other apparatus is used in their performance.

We ask that legitimate software developers cooperate with us to protect our property from any form of software piracy, imitation or infringement. ATARI is currently offering copyright licenses for a limited number of its games to selected software developers. If you happen to be selling a software product which performs a game similar to any ATARI game (such as a game created for a home computer), please contact us immediately. Write to the attention of: Patent Counsel, ATARI, Inc., 1265 Borregas Ave., Sunnyvale, Calif. 94086

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CIRCLE 287 ON READER SERVICE CARD

Figure 4.8

Atari advertisement in *Creative Computing* warning the industry that "this game is over." Here, Atari does not simply go after counterfeiters, as it used to, but also after entities who "adapt" or create "imitations" of its games. *Creative Computing*, November 1981, p. 99.

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Could Atari have alleged copyright infringement against Activision in this case? The comparison of the screenshots of *Drag Race* and *Dragster* reveal very similar cars and a very similar gameplay. Although this cloning does not lead to *trademark* infringement, since the names of the games are different and the origin of Activision's game is clearly expressed through the Activision logo, how about the *copyright* on the game itself? The difficulty in answering this question is that "it is an axiom of copyright law that the protection granted to a copyrightable work extends only to the particular expression of an idea and never to the idea itself." This long-standing principle, called the "idea-expression dichotomy," was codified in the 1976 Copyright Act. Thus, "if the only similarity between plaintiff's and defendant's works is that of the abstract idea, there is an absence of substantial similarity and hence no infringement results. It follows that copyright protection does not extend to games as such."[80] In other words, the idea of a race game, or a maze game, cannot be copyrighted, any more than the idea of a story in which a prince saves a princess, whether that story is expressed in a book (think *Snow White*) or a videogame (think *Mario*). Courts reason by analogy with literary works, which uses a *scène à faire* approach: "scènes à faire" refers to "incidents, characters or settings which are as a practical matter indispensable, or at least standard, in the treatment of a given topic. Such stock literary devices are not protectible by copyright." What *can* be protected by copyright, however, are things that provide something "new or additional over the idea," such as "shapes, sizes, colors, sequences, arrangements, and sounds."[81]

In practice, how does one determine which parts of a game are protected by copyright and which are not? This is all a matter of fact. Non-lawyers hate when lawyers answer a binary question such as "is it legal for me to do this or not?" with "well, it all depends." But there are usually good reasons for lawyers to answer this way. As the courts noted in our context, "There is no litmus paper test by which to apply the idea-expression distinction; the determination is necessarily subjective. As Judge Learned Hand said, "Obviously, no principle can be stated as to when an imitator has gone beyond copying the 'idea' and has borrowed its 'expression.' Decisions must therefore inevitably be ad hoc. . . . Nobody has ever been able to fix that boundary, and nobody ever can."[82]

At times, Atari failed to establish copyright infringement. When it sued Amusement World over *Meteors*, a clone of its smash-hit *Asteroids*, the judge ruled that, although Atari did have copyright protection for "the symbols

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that appear on the display screen, the ways in which those symbols move around the screen, and the sound emanating from the game cabinet," such protection did not extend to the underlying idea of shooting rocks with a spaceship, which was really scène à faire: "All these requirements of a videogame in which the player combats space rocks and spaceships combine to dictate certain forms of expression that must appear in any version of such a game. In fact, these requirements account for most of the similarities between 'Meteors' and 'Asteroids.' Similarities so accounted for do not constitute copyright infringement, because they are part of plaintiff's idea and are not protected by plaintiff's copyright."[83]

Likewise, "no infringement was found by the court in litigation involving *Pac-Man* in *Atari v. Williams*.[84] Although the court acknowledged the protectable elements in the game, "the defendant's game, *Jawbreaker*, was held not to contain substantial similar expressions in its use of a set of teeth instead of the PAC-MAN 'gobbler' and smiling faces instead of the 'ghost monsters' found in the PAC-MAN game."[85] But *Pac-Man* was a cash cow. By 1981, it "had generated $150 million in sales over a thirteen-month period and $1 billion in revenues for arcade operators in the course of a year."[86] Atari had obtained the exclusive home rights from *Pac-Man*'s owner, Namco, and would not give up the clone war so easily. It sued Magnavox (which had by then been absorbed by Philips), over another clone of *Pac-Man*, *K.C. Munchkin!* This was ironic, because Magnavox/Philips was busy suing Activision, in accordance with the Atari-Magnavox settlement of 1976 that forced Magnavox to sue Atari's competitors in case of patent infringement (this "frenemies" relationship between Atari and Magnavox is discussed in chapter 10). And, for once, Atari won. The court determined that while maze games, as an idea, are not capable of copyright protection, the "game as such, however, does not dictate the use of a 'gobbler' and 'ghost monsters.' Those characters are wholly fanciful creations, without reference to the real world," which, in contrast to the game itself, are protected by copyright under the idea-expression dichotomy. Philips did not have to copy these gobblers and ghost monsters to execute a maze game, but it did. A visual comparison of the two games (figure 4.9) led the judge to conclude that the "aesthetic appeal" of these characters was the same: "It is the substantial appropriation of the PAC-MAN characters that requires" a ruling of copyright infringement in this case.[87]

Going back to the Atari-Activision dispute, absent an actual court ruling, we'll never know whether a court would have found Activision's *Dragster*

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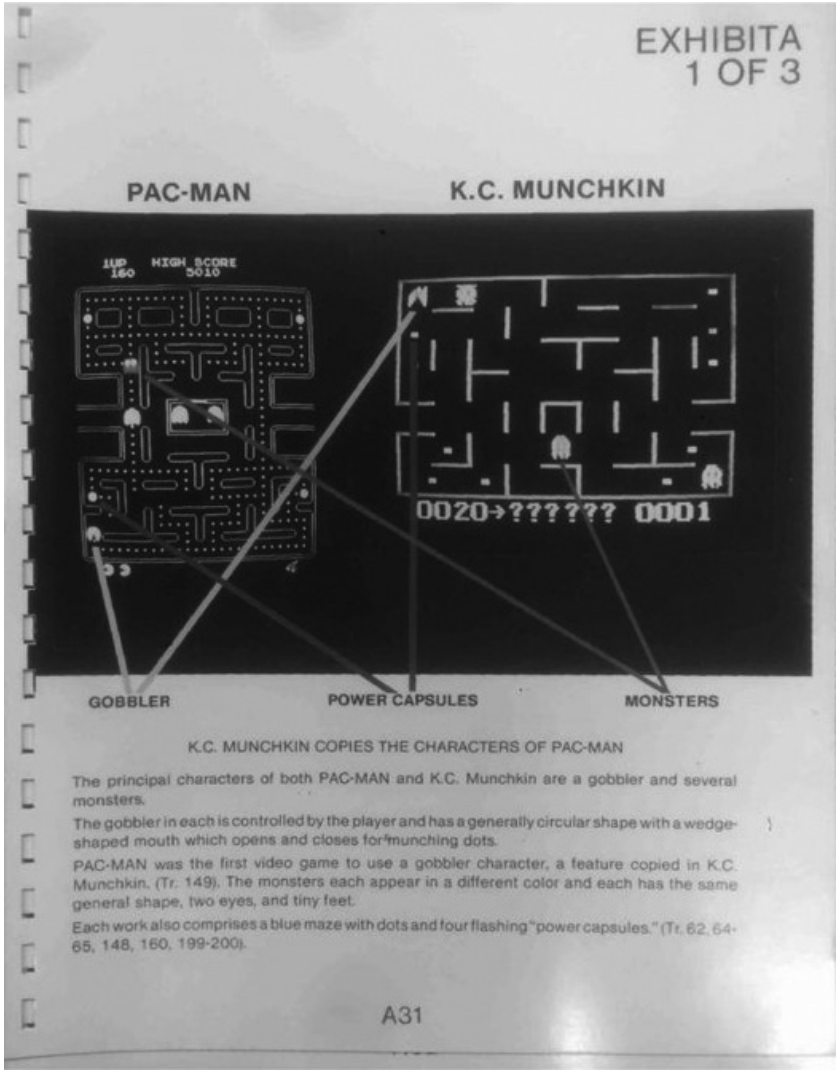
EXHIBIT A
1 OF 3
PAC-MAN
K.C. MUNCHKIN
1UP 160
HIGH SCORE 5010
0020→?????? 0001
GOBBLER
POWER CAPSULES
MONSTERS
K.C. MUNCHKIN COPIES THE CHARACTERS OF PAC-MAN
The principal characters of both PAC-MAN and K.C. Munchkin are a gobbler and several monsters.
The gobbler in each is controlled by the player and has a generally circular shape with a wedge-shaped mouth which opens and closes for munching dots.
PAC-MAN was the first video game to use a gobbler character, a feature copied in K.C. Munchkin. (Tr. 149). The monsters each appear in a different color and each has the same general shape, two eyes, and tiny feet.
Each work also comprises a blue maze with dots and four flashing "power capsules." (Tr. 62, 64-65, 148, 160, 199-200).
A31

Figure 4.9
Exhibit in the case of *Midway and Atari v. North American Philips et al.*

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to infringe on Atari's *Drag Race*'s copyright. But it does not matter in the grand scheme of things. *Dragster* was only one of many Activision games. Magnavox would later be able to recover damages against Activision for the ball-and-paddle games that infringed on its patent (see chapter 2), but not for all Activision games. Likewise, even if Atari had been able to get damages for copyright infringement for *Dragster*, it would not have been able to use the copyright tool to prevent Activision from making third-party games as a matter of principle, which was Atari's endgame in this case. The lesson of this case, then, is that copyright laws can be used on a case-by-case basis by game companies to try to block games that too closely resemble their own "shapes, sizes, colors, sequences, arrangements, and sounds." But in 1980–1981, it was not effective at precluding the emergence of the third-party software industry as a whole.

Patent Infringement

One of the grounds that Kassar threatened Activision with in the January 1980 letter was patent infringement.[88] Atari held a number of patents. Activision knew it, and the start-up came prepared. One patent in particular caught its attention. The patent was a "design patent," something quite different from the utility patents we discussed in chapter 2. The patent covered the "ornamental design for a videogame cartridge assembly," the VCS cartridge made by Atari.

Unlike utility patents, which cover structural or functional aspects of an invention, design patents protect "ornamental" aspects of an item, that is, "the visual characteristics embodied in or applied to an article."[89] Patent protections for designs were introduced in the United States in 1842, before it had been established that trademark or copyright protections might be available for designs.[90] Rules that determine whether a patent can be issued or is invalid are different than the ones for utility patents. For example, a design patent will not be issued and, if issued, can be invalidated, "if the patented design is primarily functional rather than ornamental."[91] Likewise, the rules for determining what constitutes infringement are different.

Forget for a minute what you learned in chapter 2, including the rules on functional equivalency that were at the heart of *Magnavox v. Mattel*[92] and *Magnavox v. Activision*,[93] which do not apply here. Since design patents will not be issued for the functional characteristics of an invention, then it follows

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United States Patent [19]

Thompson et al.

[11] **Des. 252,753**

[45] ** **Aug. 28, 1979**

[54] **VIDEO GAME CARTRIDGE ASSEMBLY**

[75] Inventors: **Frederick W. Thompson,** Soquel; **Douglas A. Hardy,** Portola Valley; **James C. Asher,** San Jose, all of Calif.

[73] Assignee: **Atari, Inc.,** Sunnyvale, Calif.

[**] Term: **14 Years**

[21] Appl. No.: **801,156**

[22] Filed: **May 27, 1977**

[51] **Int. Cl.** ..... **D16—05;** D16—99

[52] **U.S. Cl.** **D14/11**

[58] **Field of Search** ..... D34/5 R; D14/11; D87/1 D; 360/132, 134, 93; 206/387; 242/199, 198; 354/340

[56] **References Cited**

U.S. PATENT DOCUMENTS

D. 228,789	10/1973	Koni	D14/11
D. 239,736	4/1976	Dudley et al.	D14/11
D. 244,202	5/1977	Corrado et al.	D14/11
D. 248,470	7/1978	Talesfore	D14/11

Primary Examiner—Bernard Ansher
Attorney, Agent, or Firm—Stephen S. Townsend

[57] **CLAIM**

the ornamental design for a video game cartridge assembly, as shown and described.

DESCRIPTION

FIG. **1** is a perspective view of a video game cartridge assembly showing our new design;
FIG. **2** is a rear elevational view of the video game cartridge assembly shown in FIG. **1;**
FIG. **3** is a right side elevational view of the video game cartridge assembly shown in FIG. **1;**
FIG. **4** is a rear elevational view of the video game cartridge assembly shown in FIG. **1;**
FIG. **5** is a top plan view of the video game cartridge assembly shown in FIG. **1;** and
FIG. **6** is a bottom plan view of the video game cartridge assembly shown in FIG. **1.**
The left side elevation of the video game cartridge assembly is identical to the right side.

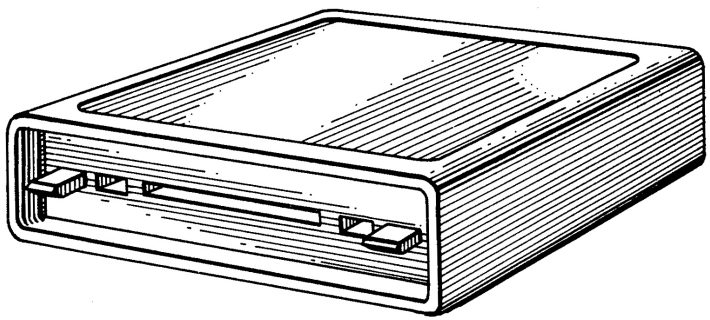

Figure 4.10
Atari's *'753* design patent for the VCS cartridge. US Patent No. Des. 252,753.

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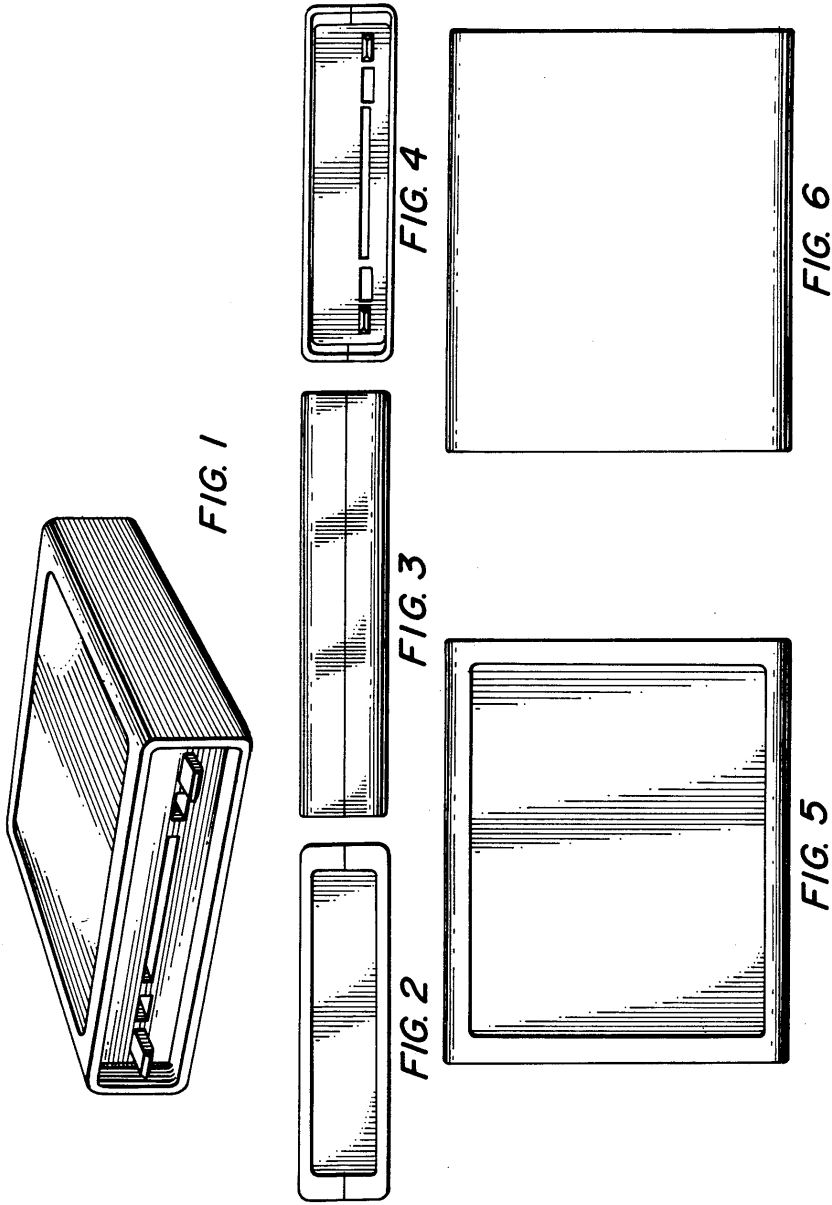

Figure 4.10
(*continued*)

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that functional equivalency of an accused item will not trigger infringement. As of 1981 (the rules have since fluctuated),[94] the test for determining what constitutes design-patent infringement was the "sameness upon the eye" test, established by the Supreme Court in 1871. In that case, the Gorham company had obtained a patent for a new design for the handles of tablespoons and forks, which, under the name of the "cottage pattern," became extremely popular. But one Mr. White started manufacturing and selling quantities of spoons and forks of said pattern, much to the chagrin of Gorham, who alleged design patent infringement and asked to court to enjoin White's making and selling of the offending spoons and forks. After much testimony was taken from witnesses, the court determined that Gorham's patent, indeed, had been infringed.[95] Under the Gorham "sameness upon the eye" test, "if, in the eye of an ordinary observer, giving such attention as a purchaser usually gives, two designs are substantially the same—if the resemblance is such as to deceive such an observer and sufficient to induce him to purchase one supposing it to be the other—the one first patented is infringed by the other."[96]

So Activision had to make sure that an "ordinary purchaser"[97] would not have mistaken the Activision cartridge for an Atari cartridge and bought it thinking he was buying an Atari cartridge. This was not an afterthought for the start-up. The Gang of Four and Levy were aware of the patent and "considered that to be a primary issue insuring we could produce a compatible cartridge without infringing that patent," said Levy. So even before approaching Wilson Sonsini Goodrich & Rosati, they sought counsel from one Tom Shotzel, an intellectual property counsel in Santa Clara, who told them it was in fact possible to produce a cartridge compatible with the VCS that would not infringe on Atari's patent. The four included this letter in their presentation to Sutter Hill Ventures, who "called in their own intellectual property counsel," Flehr Hohbach's Al Test. Test confirmed the first opinion. In fact, as Levy recalls, "he told me that he told [Sutter Hill] that Warner Communications would undoubtedly sue us at some point, but, if it was his money, he would invest in the venture." They then took both legal opinions to a plastics industrial engineer named Ronald Smith. Smith was no newbie: he and one Nicholas Talesfore held the patent on the Fairchild Channel F Cartridge Programmable Videogame Apparatus. Released in November 1976, four months after Atari introduced the VCS at the Vegas CES, but a year before Atari released that machine commercially, the Channel F was the

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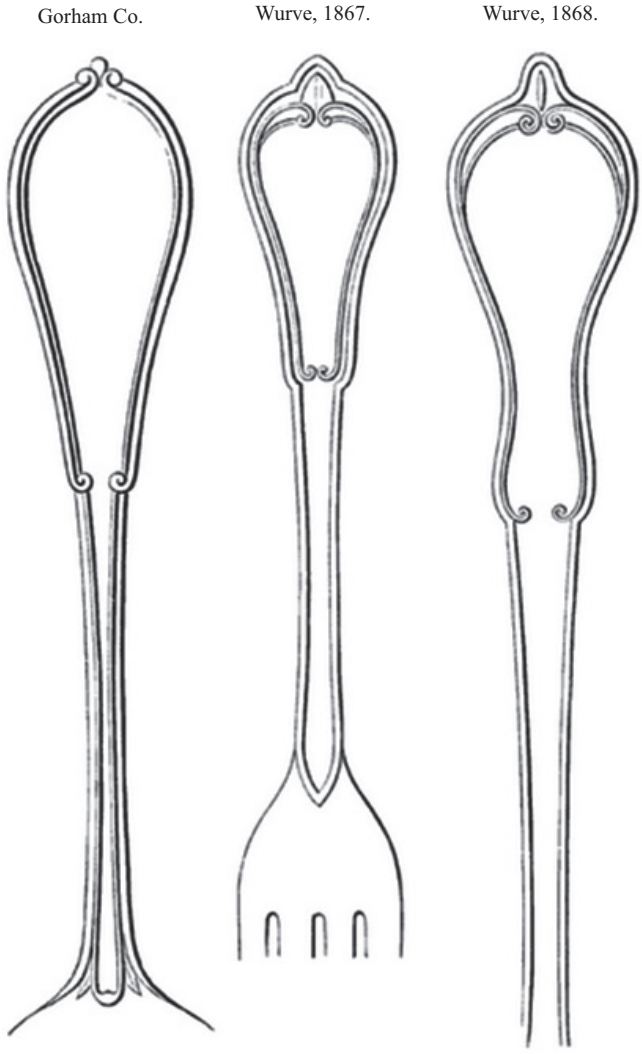

Figure 4.11
The Gorham design (left) and the White design (center and right). Imagine yourself as an "ordinary purchaser": would you have been deceived, purchasing the White design thinking it was a Gorham design?

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first console to use a microprocessor and removable game cartridges. Smith's patent was not a design patent but a utility patent over the whole console apparatus, including an "improved printed circuit board connector hardware which makes it possible to easily engage and disengage a cartridge containing printed circuit board mounted electronic components and circuitry . . . with a minimum of insertion force."

As Levy put it, Smith "was fairly familiar with the design of interfacing cartridges with systems. We gave him the Atari patent. We gave him the benefit of the opinions that we had from Mr. Shotzel and Mr. Test, and we asked him to design a cartridge that would be able to interface with the Atari 2600 Video Computer System, would be functional, would have functional integrity, and would not infringe their patent and could not be obsoleted by Atari without obsoleting their own cartridge." And "we made sure that the cartridge that we were designing could not be mistaken cosmetically for the Atari cartridge so that there was not an infringement of that design."[98] One specific departure from the Atari design, Levy recalls, is that "we didn't use the flap in front of the cartridge that protected the ROM because we thought it was not necessary."[99]

Do the Activision cartridges, and those from Imagic, CBS Electronics, and Coleco, all for the VCS, reproduced below, look sufficiently different from a pure design standpoint that the "ordinary purchaser" would have been able to tell the difference, or are the similarities confusing to the eye? Just as you played law student in chapter 3, it is time for you, dear reader, to play jury. Take a moment to look at them closely. What do you think?

Feel free to show these pictures to family members, friends, or colleagues. What do *they* think? Most likely, your sample will not reach an agreement. We'll never know whether Activision would have passed the "sameness upon the eye" test. After all, what an "ordinary purchaser" would have thought is a matter of fact, not of law, and matters of fact are decided upon by notoriously unpredictable juries. But no story has ever surfaced of an unfortunate little Johnny, who, while visiting little Judy's house for a play date, mistakenly plugged an Atari cartridge into the VCS thinking it was an Activision cartridge and was forever traumatized by the poor quality of the game he had picked.

The design process was still ongoing when Activision received the letter from Kassar threatening a lawsuit if Activision infringed on the design

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United States Patent [19]

Smith et al.

[11] **4,095,791**

[45] **Jun. 20, 1978**

[54] **CARTRIDGE PROGRAMMABLE VIDEO GAME APPARATUS**

[75] Inventors: **Ronald A. Smith,** Los Gatos; **Nicholas F. Talesfore,** San Jose, both of Calif.

[73] Assignee: **Fairchild Camera and Instrument Corp.,** Mountain View, Calif.

[21] Appl. No.: **716,909**

[22] Filed: **Aug. 23, 1976**

[51] **Int. Cl.**[2] **A63F 7/06**

[52] **U.S. Cl.** ..... **273/85 G;** 206/328; 273/DIG. 28; 361/399

[58] **Field of Search** ..... 273/1 E, 85 R, DIG. 28, 273/1; 35/8 A, 9 A; 206/303, 444, 328; 340/324 R, 323 R, 311; 346/134–137; 360/93, 95, 96, 132, 33; 364/200, 900; 339/176 MP, 17 LL, 17 M, 176, 17; 361/399

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Primary Examiner—Vance Y. Hum

Attorney, Agent, or Firm—Alan H. MacPherson; Henry K. Woodward; Robert C. Colwell

[57] **ABSTRACT**

A video game apparatus for connection to a standard television set and including an electronics-containing console having a plurality of parameter selection buttons and a chute mechanism for receiving a replaceable cartridge-containing supplementary electronic circuitry, and a pair of hand controllers for providing player control inputs to the console electronics. Improved connector apparatus is associated with the chute mechanism to enable electrical connection to be made to a cartridge contained printed circuit board with a minimum of insertion force.

11 Claims, 12 Drawing Figures

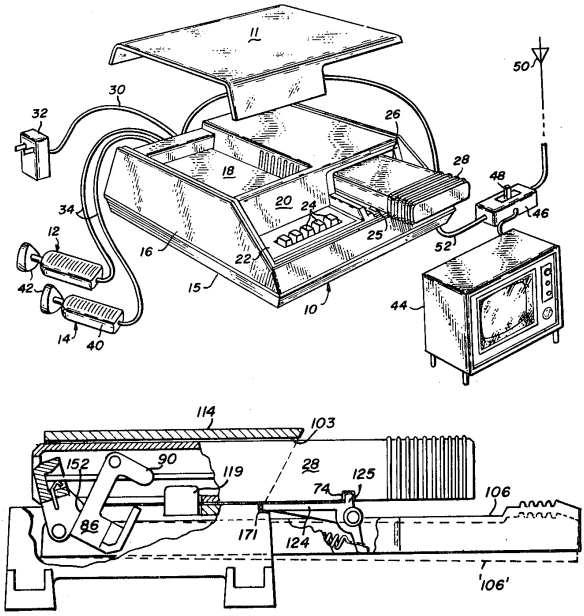

Figure 4.12

Fairchild's *'791* patent. Notice how the verbal and drawn descriptions focus on the functional aspects of the invention, in contrast to Atari's, which focused on the ornamental aspects of the cartridge. US Patent No. 4,095,791.

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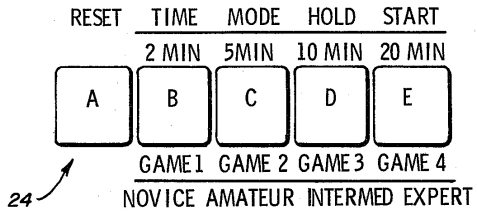

Fig_3

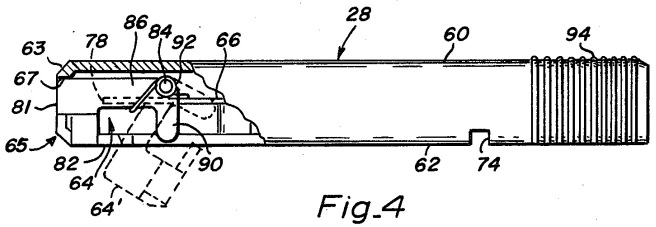

Fig_4

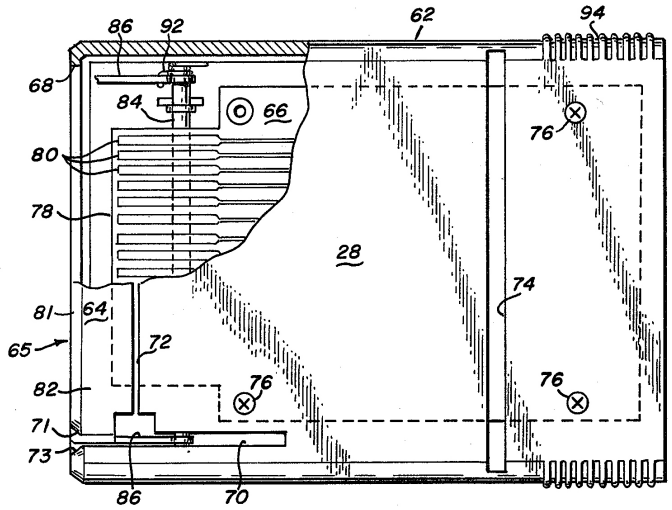

Fig_5

Figure 4.12
(*continued*)

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Figure 4.13
VCS-compatible cartridges: Atari's *Space Invaders* (original VCS cartridge), Activision's *Kaboom!*, Imagic's *Star Voyager*, CBS Electronics' *Solar Fox*, and Coleco's *Donkey Kong*, featuring a top label affixed in reverse. Author's collection.

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patent. At that point, Levy recalls, "we reviewed the status of the design of our cartridge and compared it to an actual Atari cartridge. And I received assurances from Mr. Smith that when his design was complete that an uninformed consumer would not be able to mistake our cartridge for an Atari cartridge and, therefore, in the opinion, I believe, of counsel at that time that would not constitute any potential infringement of the design patent."[100] Here, we observe an interaction that is usually obfuscated in industrial-design history—that of the lawyer, the businessperson, and the designer working hand in hand to design a product that complies at the same time with both industrial and legal specifications. Why do all third-party cartridges for the VCS look slightly different than Atari's? Not because a marketing person thought they'd be more appealing that way. Because a lawyer told the designers to make them look that way!

Breach of a Confidentiality Agreement / Theft of Trade Secrets

Here comes Atari's fourth and last argument. In order to make software for a machine, one needs to know how it works. It helps to have a development manual, which is a document produced by the designer of the machine, that details its specifications and explains its inner workings and how to interface with it. Sometimes, the hardware manufacturer decides to make the machine an open system, to encourage the development of third-party software, which makes the machine more valuable and creates a positive feedback loop. This is the route Alan Miller, who, before starting the Gang of Four, was one of the developers of the operating system for the Atari 400/800 personal computer, wanted to take: "All of us on the project strongly urged Senior Management to make the Atari 400/800 an open design and publish the operating system and hardware manuals. We felt this was essential to making the computer successful because it would encourage outside development and allow much more software to be developed than Atari could ever produce. Unfortunately, management decided to make it a closed system."[101] Atari was only continuing with the tradition of secrecy started with the development of the VCS, which was a closed system. In practice, it meant that the knowledge necessary to make a cartridge work on the VCS was kept secret. But closed systems stay closed only if absolute secrecy is implemented through business or legal processes.

One way to maintain secrecy is to keep machines and description of processes under lock and key in secure facilities. Coca-Cola, for example, has

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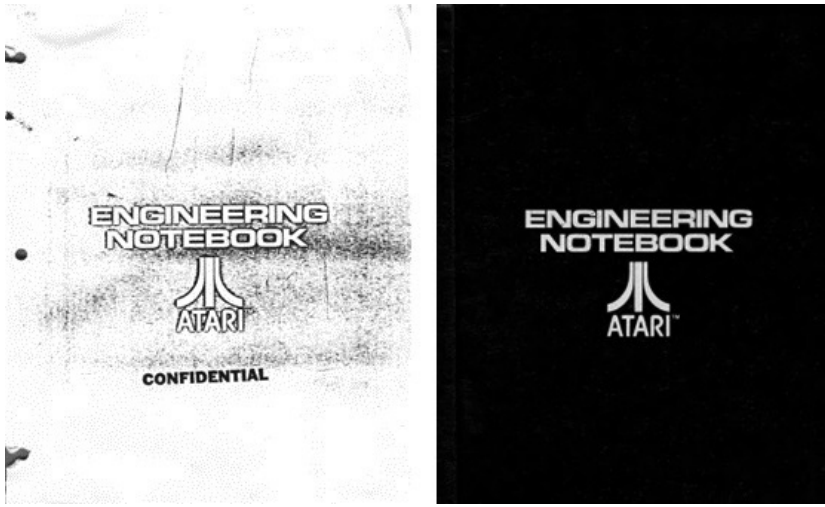

Figure 4.14
Cover of Joe DeCuir Engineering Notebooks. The 1977 copy (left) is marked as CONFIDENTIAL, but not the 1978 copy (right). Joe DeCuir collection, Internet Archive.

historically kept its secret recipe in a vault, and ships out only syrup that's already been mixed through a secret process, strictly in-house.[102] Companies such as Atari also keep engineering notebooks (the equivalent of Coke's recipe books) under tight control. As evidenced by the first page of the notebook of Joe DeCuir, one of the designers of the VCS at Cyan Engineering, Atari's R&D compound in Grass Valley: "all engineering notes, sketches, schematics, etc," are to be recorded in the book, "UNDER NO CIRCUMSTANCES MAY ANY PAGES BE REMOVED FROM THIS BOOK" (all caps included in the original), and "under no circumstances may this book be duplicated for personal reasons or removed from the company premises."[103] Such documents are also typically stamped "CONFIDENTIAL," though in practice the stamping is often forgotten because lawyers, much to our chagrin, cannot be present everywhere paper is printed and business is conducted.

Such documents are considered "trade secrets." Stealing them, or making unauthorized copies of them before leaving a company, is considered a theft of trade secret, "and significant protection is provided . . . against departing employees in circumstances where the misappropriation is clear (as when the former employee has removed or copied documents)," both in the form of civil damages, and, sometimes, as federal criminal penalties.[104]

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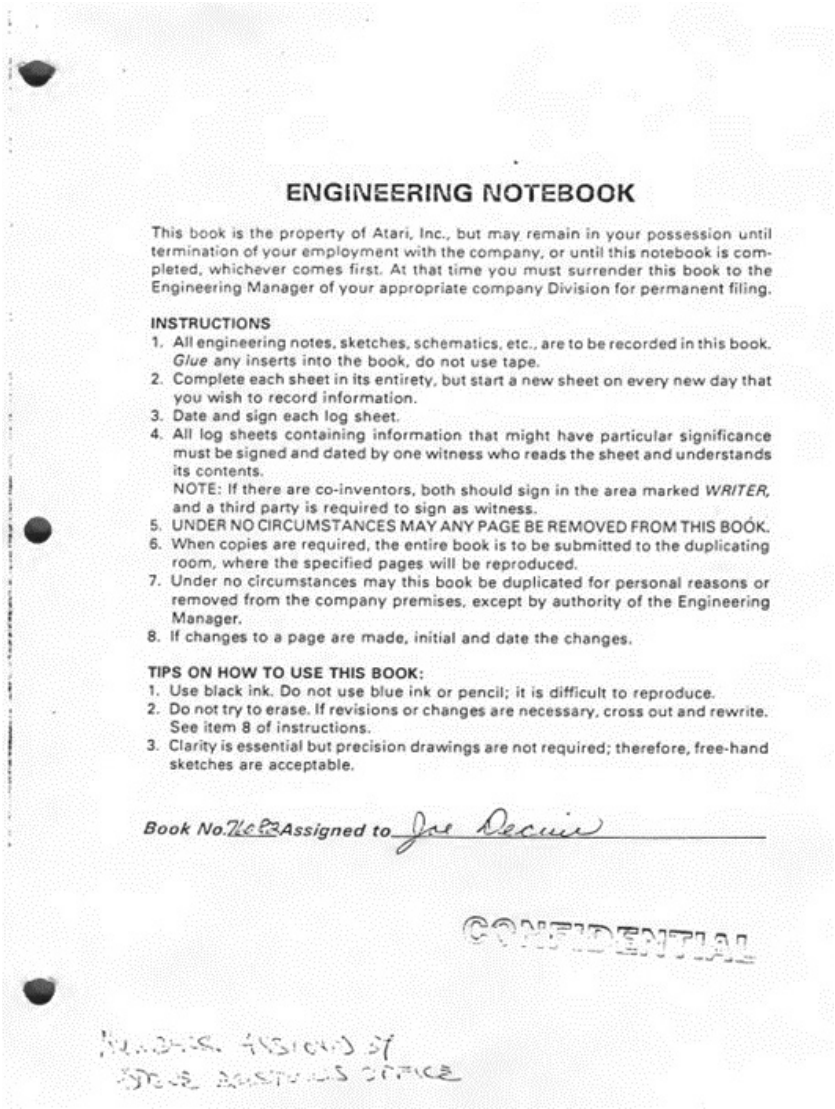

ENGINEERING NOTEBOOK

This book is the property of Atari, Inc., but may remain in your possession until termination of your employment with the company, or until this notebook is completed, whichever comes first. At that time you must surrender this book to the Engineering Manager of your appropriate company Division for permanent filing.

INSTRUCTIONS

1. All engineering notes, sketches, schematics, etc., are to be recorded in this book. *Glue* any inserts into the book, do not use tape.
2. Complete each sheet in its entirety, but start a new sheet on every new day that you wish to record information.
3. Date and sign each log sheet.
4. All log sheets containing information that might have particular significance must be signed and dated by one witness who reads the sheet and understands its contents.
   NOTE: If there are co-inventors, both should sign in the area marked *WRITER*, and a third party is required to sign as witness.
5. UNDER NO CIRCUMSTANCES MAY ANY PAGE BE REMOVED FROM THIS BOOK.
6. When copies are required, the entire book is to be submitted to the duplicating room, where the specified pages will be reproduced.
7. Under no circumstances may this book be duplicated for personal reasons or removed from the company premises, except by authority of the Engineering Manager.
8. If changes to a page are made, initial and date the changes.

TIPS ON HOW TO USE THIS BOOK:

1. Use black ink. Do not use blue ink or pencil; it is difficult to reproduce.
2. Do not try to erase. If revisions or changes are necessary, cross out and rewrite. See item 8 of instructions.
3. Clarity is essential but precision drawings are not required; therefore, free-hand sketches are acceptable.

Book No. 76 *Assigned to* Joe DeCuir

CONFIDENTIAL

Figure 4.15
First page of Joe DeCuir's 1977 Engineering Notebook, numbered and signed by the individual engineer. Joe DeCuir collection, Internet Archive.

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Short of stealing confidential documents, how about "tacit knowledge," that is "the skill and experience associated with effectively creating, developing, and implementing" innovation?[105] What if, like every member of the Gang of Four, I happen to know the inner workings of the VCS because I worked at Atari, and, after resigning and starting my own firm, I use this confidential knowledge to develop a product that will compete with Atari? Is this a crime? Can I be sued for civil damages?

The possible criminal dimension set aside, trade secrets are typically enforced through contractual provisions in employment contracts and, where necessary, civil lawsuits for damages when those provisions are breached. These provisions are typically called "confidentiality agreements," and sometimes other names, as in the case of Al Alcorn's 1975 employment agreement with Atari, reproduced below, where they appear under the heading "Disclosure of Information" (the lawyer who drafted this contract made a peculiar choice—the clause should really have been called *non*-disclosure of information). In them, the employee, as Alcorn here, commits to something along the lines of not disclosing, and agrees not to "make use . . . for his own purpose of for the benefit of any person, firm, corporation, or other entity . . . during or after the period of his employment," of the company's "trade secrets, its information of a private internal or confidential nature and its private processes."[106]

Suing for civil damages on the ground of contractual violation of a confidentiality agreement and for wrongful use of trade secrets is the route Atari took to bend Activision and the Gang of Four into submission. Atari went after both the company *and* the founders individually.

Activision had been funded with only $650,000 of venture capital, with the understanding that the entrepreneurs would put skin in the game as well, which some of them did by getting a second mortgage on their homes.[107] From that perspective, being slapped with a $20 million lawsuit will make one think twice about going to war with behemoth Warner, when one could instead quietly back off and fold the start-up before having one's house taken away. Levy recalls, laughing, that when the $20 million story broke, one of his uncles walked down the street to his parents' house, *Wall Street Journal* in hand, and they immediately called him, panicked: "Do you have that much money?!"[108]

The founders had come prepared. "We entered into the business expecting to be sued, and were given legal advice as to what our rights were as departing employees. In a nutshell, that was that slavery was illegal, Atari didn't own us, and that we were free to pursue our art at another company—particularly

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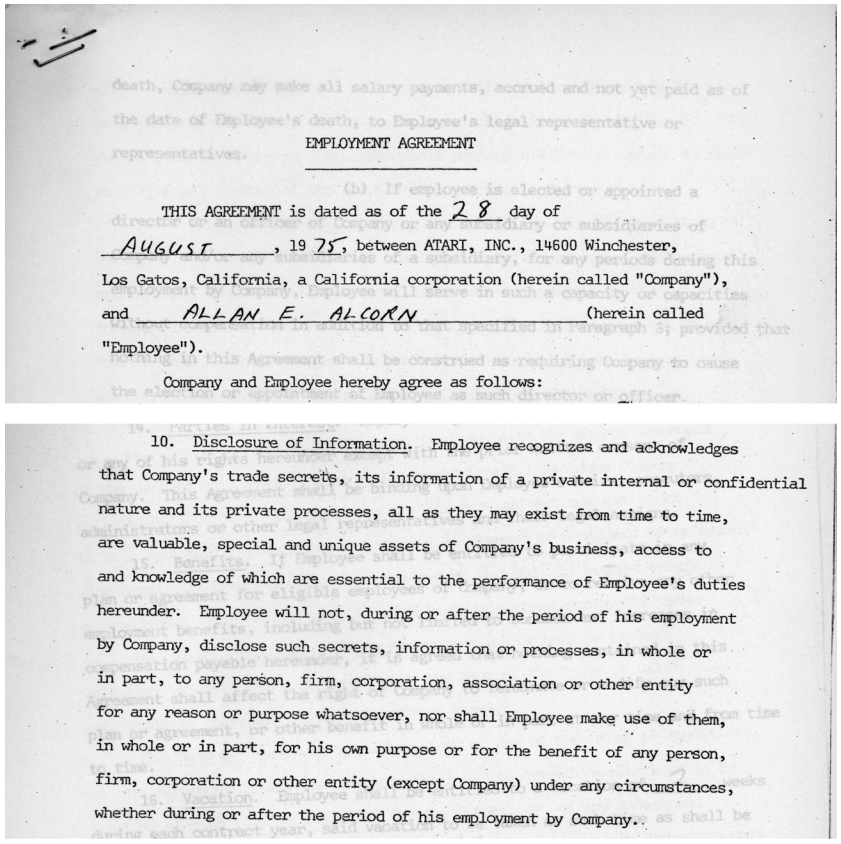

EMPLOYMENT AGREEMENT

THIS AGREEMENT is dated as of the 28 day of AUGUST, 19 75, between ATARI, INC., 14600 Winchester, Los Gatos, California, a California corporation (herein called "Company"), and ALLAN E. ALCORN (herein called "Employee").

Company and Employee hereby agree as follows:

10. Disclosure of Information. Employee recognizes and acknowledges that Company's trade secrets, its information of a private internal or confidential nature and its private processes, all as they may exist from time to time, are valuable, special and unique assets of Company's business, access to and knowledge of which are essential to the performance of Employee's duties hereunder. Employee will not, during or after the period of his employment by Company, disclose such secrets, information or processes, in whole or in part, to any person, firm, corporation, association or other entity for any reason or purpose whatsoever, nor shall Employee make use of them, in whole or in part, for his own purpose or for the benefit of any person, firm, corporation or other entity (except Company) under any circumstances, whether during or after the period of his employment by Company.

Figure 4.16
Confidentiality clause in 1975 Employment Agreement between Al Alcorn and Atari. Employment Agreement between Allan E. Alcorn and Atari, Inc., August 28, 1975, Al Alcorn papers relating to the history of videogames, 1973–1974, Special Collections & University Archives, Stanford University. Courtesy of the Department of Special Collections, Stanford University Libraries.

in California where not even non-compete agreements are enforceable (had there been any)."[109]

Here, a tension appears between two policy principles embedded in legal principles. On one hand, California, and Silicon Valley in particular, promotes employee mobility, and does so through the unenforceability of *non-competes*. If *non-disclosure* agreements such as the one in Alcorn's contract, wherein he promised not to use Atari's trade secrets and confidential information in the pursuit of another business after termination of his employment, were

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enforceable, it would make for a disguised perpetual non-compete clause: workers cannot erase their memory, and therefore they could never go to competitors. On the other hand, companies in the high-technology field spend enormous amounts of money developing new products, and if any employee can just leave and take trade secrets with them to start a competing venture, that would provide a negative incentive for companies to spend funds on research and development (R&D). For this second reason, while non-competes are unenforceable, California does protect trade secrets through law.

This field of trade secrets law is particularly arcane, and has evolved overtime. At the time of the lawsuit, and in a nutshell, for a claim based on trade secrets to be actionable for damages, "the original employer would have to show that the former employee's new employer 'misappropriated' information of the original employer, that the information was not generally known, and that the original employer had made reasonable efforts to protect the information's secrecy."[110] Here, things get murky for a couple of reasons. First, whether there was misappropriation is a question of fact, to be decided by a jury. Because of the fine line between tacit knowledge an employee can use and knowledge of trade secrets that cannot be used, jury trials on such technical legal issues are notoriously unpredictable.[111] Second, there is a gap between the letter of the law and its practice in a place like the State of California. In addition to the fact that California places a premium on mobility, also remember that, especially at the time of the *Atari v. Activision* case, Silicon Valley shunned litigious behavior. There was therefore a strong reputational risk for companies looking to sue for theft of trade secrets (no one would ever join that employer in the future knowing they would get sued when they eventually left), and for law firms alike.[112] To sum a complex game here, it is a long-standing principle that "trade secret law does not give the trade secret owner the rights of a patent owner, and a trade secret owner has no rights against one who learns the secret through independent invention."[113] And, through the process of mediation of that tension by the actual legal practice, in the State of California, "while trade secrets law protects pure information in theory, in practice trade secret actions by ex-employers are rarely successful where the former employee(s) take nothing tangible with them."[114]

In practice, then, in *Atari v. Activision*, for Atari to be successful, they would have had to demonstrate that the Gang of Four had stolen confidential documents. One funny thing is that it is unclear *whether there actually was* a comprehensive VCS development manual to begin with at the time the four left.

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The development manual, named 2600 STELLA Programmer's Guide, had been written by Steve Wright. Stella was the name of the Television Interface Adapter chip, which was the core of the VCS. Wright had been hired by Atari in 1978. When asked to program games, he found that there was no documentation whatsoever for the Stella chip.[115] "So to help myself learn," he recalls, "I wrote it."[116] But the document, now widely available on the public internet[117] and identified by Wright as authentic,[118] is dated December 3, 1979—that is, two months after Activision was incorporated and the four had left.

Atari could also try to show, as evidence of misappropriation of trade secrets, that reverse engineering the VCS in the amount of time it took the four to do it would have been impossible without impermissibly using trade secrets. This is the route Atari took. It did not question the feasibility of the reverse-engineering process without theft of trade secrets, but alleged that the speed at which it was done indicated that it could not possibly have been done by memory only: "The speed with which the defendants were able to design, manufacture, and market cartridges adapted to the extremely complex programming needs of Atari's 'Video Computer System' hardware is so remarkable as to have been virtually impossible without the wrongful use of trade secrets acquired by the individual defendants during their employment with Atari," the company stated.[119]

Activision had anticipated that claim. "Going into a position of competition with Atari, and therefore knowing that we would certainly be sued, we left with just the shirts on our backs. You will find other former Atari employees who, having left the company under non-competitive situations, chose to keep programming manuals, prototypes, and even semiconductor chip plots. Such was not the case at the founding of Activision, said Crane."[120] Whitehead provided some practical details: "Dave Crane, with some help from some simple reverse engineering and a little input from Al Miller, designed the hardware, and I wrote the debugger software. Simply, it was a ROM simulator with a RS-232 terminal interface which plugged into an Atari cartridge slot."[121] Miller provided specifics of a time frame: "Reverse-engineering the Atari 2600, creating development systems, and starting to design games. All of this was accomplished in just a few months."[122]

Activision had taken three steps that could be used to counter Atari's claims. First, Crane thoroughly documented his reverse-engineering efforts in a notebook, which could be used as evidence that they had indeed "gone through the painstaking process" of actually reverse engineering the console

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5.3 JOYSTICK CONTROLLERS

Two joysticks can be read by configuring the entire port as input and reading the data at SWCHA ($280) according to the following table:

DATA BIT	DIRECTION	PLAYER
D7	Right	P0 (Left Player)
D6	Left	P0
D5	Down	P0
D4	Up	P0
D3	Right	P1 (Right Player)
D2	Left	P1
D1	Down	P1
D0	Up	P1

A "0" in a data bit indicates the joystick has been moved to close that switch. All "1"s in a player's "nibble" indicates the joystick is not moving.

NOTE: The trigger buttons do not go to the PIA. They are read on bit 7 of INPT4 and INPT5 of the TIA.

5.4 PADDLE (Pot) CONTROLLERS

Only the paddle triggers are read from the PIA. The paddles themselves are at INPT0 through INPT3 of the TIA. The data bit is set to 0 when the trigger is pressed. The paddle triggers can be read at SWCHA according to the following table:

DATA BIT	PADDLE NUMBER
D7	Paddle 0
D6	Paddle 1
D5	Not used.
D4	Not used.
D3	Paddle 2.
D2	Paddle 3.
D1	Not used.
D0	Not used.

Figure 4.17
A select page of the Atari VCS Programmer's Guide. Stella (Atari 2600) Programming Guide (1988), Internet Archive.

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Ex-Atari Employees Sued For $20 Million

NEW YORK — Atari, Inc., the electronic games subsidiary of Warner Communications, Inc. filed a $20 million suit in San Francisco federal court last week against Activision, Inc. and four of its principals. The suit, which seeks injunctive relief in addition to damages, charges Activision and Alan Miller, Larry Kaplan, David Crane and Robert Whitehead with trademark infringement, unfair competition and a conspiracy to appropriate Atari's trade secrets.

The individuals being sued are former employees of Atari who were responsible for creating the software, or game cartridges, which are sold for use in Atari's "Video Computer Systems." The complaint alleges that the former employees left Atari after conspiring to take confidential trade secrets which they have used to create game cartridges for use with the Atari video computers.

Commenting on the suit, an Atari spokesman said, "The speed with which the defendants were able to design, manufacture and market cartridges adapted to the extremely complex programming needs of Atari's 'Video Computer System' hardware is so remarkable as to have been virtually impossible without the wrongful use of trade secrets acquired by the individual defendants during their employment with Atari."

Figure 4.18
Atari makes its "wrongful use of trade secrets" argument in the press. *Cash Box*, May 24, 1980.

from scratch.[123] Second, "Levy noted that he had made an offer to Atari to appoint a neutral third party to review all of Activision's development operations to ensure that no information proprietary to Atari was in use. But Activision's offer was ignored, and the suit was subsequently filed by Atari."[124] And third, Activision actually did hire a third party, who had never been employed by Atari and therefore was not privy to the official development manual, to actually reverse engineer the VCS! If that person could do it in the

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same amount of time it took Crane, that would have quashed Atari's arguments. This is exactly what happened.

That third party was Jerry Lawson, an unsung star engineer from the early days of the videogame industry. A largely self-taught African American engineer who attended college without graduating, Lawson had joined Fairchild Semiconductors in the seventies and quickly moved up the ranks to become the chief hardware engineer of its videogame division. As such, he led the team that designed the Fairchild Channel F (short for Channel Fun), the first console to use a microprocessor and removable game cartridges, earning him the title of "father of the videogame cartridge."[125] Lawson did manage to reverse engineer the VCS and documented it all, giving Activision ammo that Atari certainly considered as it eventually backed off and settled the lawsuit.

Realizing that "as a black man, [he] was not going to get anywhere" at Fairchild, Lawson took his new knowledge of the VCS with him. In May of 1982, less than six months after the *Atari-Activision* settlement, he started his own third-party videogame company, Video-Soft, Inc., developing a dozen games for the VCS (none of which actually ever got published).[126] What is significant about this from an industry standpoint is that, even if Atari had been able to demonstrate that Activision actually used trade secrets to make VCS-compatible games, it had been possible for someone with no ties whatsoever to Atari to purchase a VCS and official game cartridges from a retail store, reverse engineer the platform, and start making compatible cartridges. Even if Atari had beat Activision, they would not have been able to stop the oncoming flurry of other third-party developers.

The Floodgates of Third-Party Manufacturing Open

Overall—and the contents of the mysterious settlement notwithstanding—Atari's failure to secure a decisive victory *in court* against Activision opened the floodgates of third-party manufacturing. Word got around of the essence of that settlement, which was that Atari had nothing that could, from a legal standpoint, preclude third-party game development from burgeoning. So Atari tried the business route. Crane recalled "battl[ing] through Atari's attempts to close off the retail channels to our product."[127] In the pre-Activision world, distributors of consoles did not have exclusive contracts with manufacturers; "they weren't preempted from carrying other manufacturers' products. So when Activision, Coleco and Imagic came along, they went to the same distributors." By then, the distribution channels set up by

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Atari starting with *Home Pong* were already in place and ready to give shelf space to the competition. In this sense, an industry observer noted, "Atari put everybody else in business."[128]

When Activision came along, Atari tried to shut down these pipelines, now demanding exclusivity agreements with its distributors and telling them that they wouldn't be getting any more Atari products if they carried Activision's.[129] There is nothing unusual in this: exclusive distribution agreements are common in the business world. In this case, the practice was combined with Atari's public relations campaign suggesting that Activision was a criminal enterprise, another time-tested business technique. As Whitehead remembers, "there is also the intimidation process that occurs with customers and consumers you compete for, that flirts with the dark side of business ethics. If you can label a competitor as a 'thief,' even for a short time, it gives you a distinct advantage. Some of the intimidation tactics of our customers were not always so subtle. It tests your competitive skills."[130] But this did not stop the tide.

Activision released twenty-five games between July 1980 and March 1983—twenty-three for the VCS and two for the Mattel Intellivision—eventually also making games for the Colecovision.[131] Its revenue grew exponentially, reflecting the "hockey-stick" pattern that Atari had attained and that all start-ups dream of. At the end of its first full fiscal year, March 31, 1981, the company had a revenue of roughly $6.5 million, corresponding to 5 percent of the market, for a profit of $744,000.[132] A year later, March 31, 1982, its revenue had been multiplied by ten (to $66 million) and its profit by more than seventeen (to $12.9 million).[133] The following six months, from the end of March 1982 until the end of September 1982, brought in revenue of $63 million, roughly as much as the entire previous fiscal year,[134] and the following six months, which included the 1982 Christmas season, brought in yet another $94 million, making the total revenue for fiscal year ending March 31, 1983, a whooping $157 million.[135] By that time, Activision had cornered 20 percent of the market, while Atari was down to 58 percent, down from 75 percent in 1981.[136] According to Miller, these figures enabled Activision to pass Atari as the fastest-growing venture-capital-backed company in US history at the time.[137]

Riding this wave of success, Activision went public on June 19, 1983.[138] It wasn't just Activision that bloomed during this period. By late 1982, "some 20 manufacturers—from divisions of 20th Century-Fox and Paramount Pictures through divisions of Quaker Oats and General Mills to companies that

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started in a garage with $500,000—[were] competing in what one game company executive calls 'the terrible software wars.'"[139] Even companies competing with Atari at the hardware platform level and that produced games, such as Mattel, would start porting their in-house games to the VCS.[140] As of the fall of 1983, the *New York Times* counted the number of manufacturers that "scrambled to get a foothold in the promising industry" at "about 100."[141] According to the authoritative hobbyist-maintained database AtariAge, the number of companies that made games for the Atari VCS alone eventually reached 161 (this number excludes homebrew creations of hobbyists).[142]

As far as the number of VCS games themselves were concerned, industry observers reported the number of two hundred for 1982,[143] with projections of another two hundred for 1983.[144] Overall, the AtariAge database tracked over five hundred games released for the VCS in the United States alone. This number does not include games released in other countries, nor does it include pirates, clones, or modified (enhanced) versions, also referred to as hacks.[145] An independent researcher who included commercially released hacks documented seven hundred games as of 2005.[146] And these numbers are for the Atari VCS only. Most large developers ported their games across competing consoles as well, including chiefly the Mattel Intellivision and the ColecoVision, the improved capabilities of which had started garnering interest.[147] At the 1982 Summer Videogames Show, for example, a reporter's attention got caught by "a very interesting display" at the Coleco booth: "Set up side by side were Coleco's three versions of the same game, *Donkey Kong*—in Atari cartridge, Intellivision cartridge, and Colecovision cartridge forms. . . . The Colecovision takes the top prize in arcade realism."[148] *Cash Box* magazine estimated a total of 250 different cartridges being on the market—across all console platforms—for Christmas season 1982.[149]

Things Get Out of Hand: "When You Score . . . You Score!"

Not all games, of course, were of the same quality. A notable unintended consequence of the third-party movement was the emergence of games that ranged from risqué to outright sexist and/or racist. No company exemplifies this trend better than American Multiple Industries (AMI), and its line of games, Mystique Presents Swedish Erotica. The venture was based on market research that indicated to its founders, Stuart Kesten and Joel Martin, "that one in three *Penthouse* subscribers owned an Atari 2600, which suggested a

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significant untapped market" (for our younger readers, *Penthouse* used to be a leading pornographic magazine in the United States).[150] "When you score . . . you score!" was Mystique's tagline.

In 1982, AMI released a series of games that *Videogaming & Computer Gaming Illustrated* described as "enough to send the most liberal sexual enthusiast staring at his/her shoes in abashment."[151] These included *Beat 'Em and Eat 'Em*, "a crude interpretation of Activision's Kaboom!, a game that's normally about catching bombs before they hit the ground. In AMI's game, the bomb-throwing villain was replaced by a nude man launching semen that you have to catch in a nude woman's mouth."[152] In *Bachelor Party*, "a knockoff of Atari's Breakout . . . instead of bouncing a ball at a wall of bricks, you bounced a nude man at a wall of nude women."[153] And, in "*Burning Desire*, the player assumes the role of a nude man hovering over on a helicopter trying to save a woman from getting consumed by flames, while dodging stones being thrown at him by cannibals. He ejaculates to put out the fire, then he has the woman latch onto his penis and airs her to safety. In *Jungle Fever*, the roles are reversed and the player controls a woman who lactates the fire out."[154]

By all accounts, and sexual theme aside, the games were of very poor quality, "as boring as boring can be," as *Videogaming & Computer Gaming Illustrated* described one of them.[155] Quality wasn't the point. In a cartridge market that by 1982 was reaching saturation, the name of the game had become differentiation: "Somehow, [the new game companies] have to attract attention," said Steve Bloom, editor of *Video Games* magazine "through advertising, or by bringing out some weird or obscene game."[156] For AMI's Kesten, "it's just that the adult angle was the easiest way to crack the market."[157] Competitors on that niche pixelized-indecency market, such as Multivision, Inc. and Game-X, felt the same way: "I just felt that there was no way a small company could compete with Atari or Activision or Imagic," Alan Roberts, founder of Game-X, recalls. Speaking of his games, he continued, "I thought this was something that was unique and could get us a little piece of the market for ourselves."[158]

In its quest for differentiation, AMI upped the ante and, in October 1982, released the infamous *Custer's Revenge*. Describing it, as an industry reporter did, as a game that "was in such shockingly bad taste it would spark a whole new level of controversy,"[159] euphemistically depicts a racist game that promoted sexual violence. The game is named after General Custer, a controversial figure in US Civil War history, fighting for the Union, who, in 1876, while

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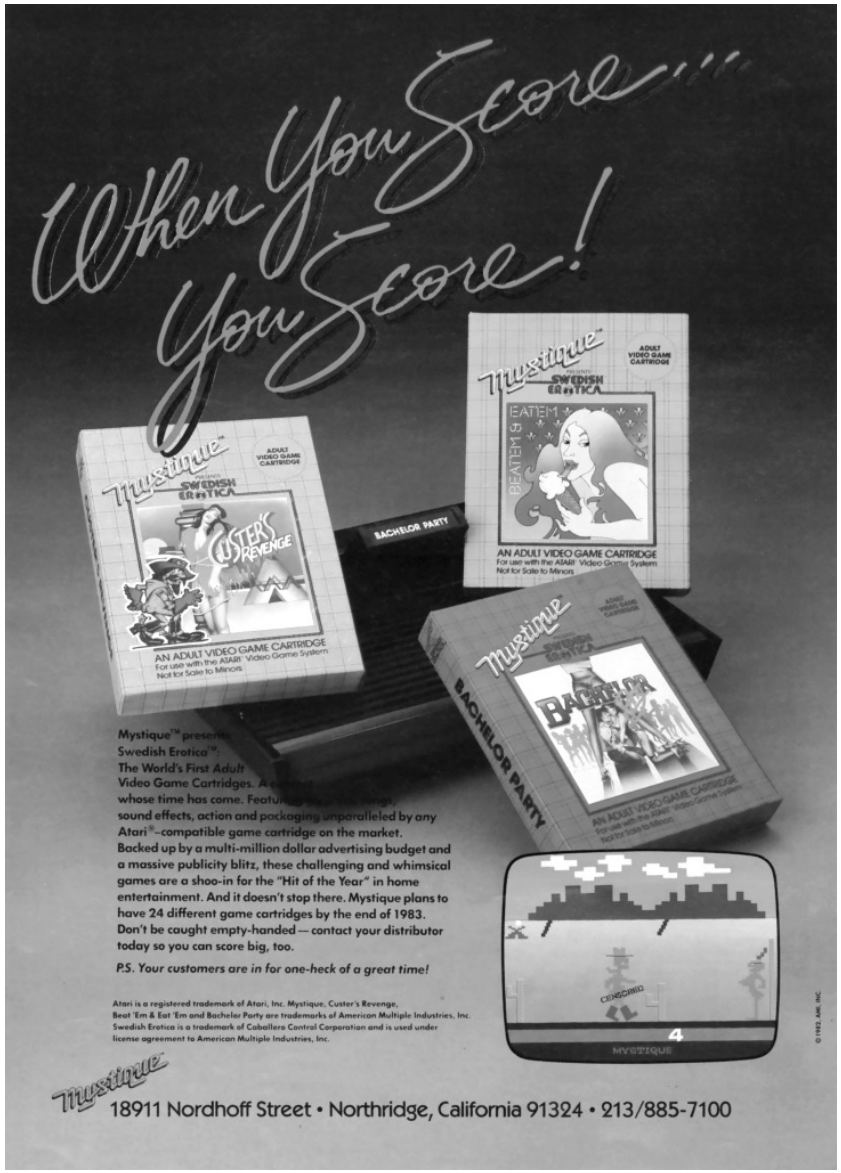
When You Score . . . You Score!
Mystique
ADULT VIDEO GAME CARTRIDGE
SWEDISH EROTICA
CUSTER'S REVENGE
AN ADULT VIDEO GAME CARTRIDGE
For use with the ATARI® Video Game System
Not for Sale to Minors
BEAT 'EM & EAT 'EM
BACHELOR PARTY
Mystique™ presents Swedish Erotica™. The World's First Adult Video Game Cartridges. A [illegible] whose time has come. Featuring sound effects, action and packaging unparalleled by any Atari®-compatible game cartridge on the market. Backed up by a multi-million dollar advertising budget and a massive publicity blitz, these challenging and whimsical games are a shoo-in for the "Hit of the Year" in home entertainment. And it doesn't stop there. Mystique plans to have 24 different game cartridges by the end of 1983. Don't be caught empty-handed — contact your distributor today so you can score big, too.
P.S. Your customers are in for one-heck of a great time!
Atari is a registered trademark of Atari, Inc. Mystique, Custer's Revenge, Beat 'Em & Eat 'Em and Bachelor Party are trademarks of American Multiple Industries, Inc. Swedish Erotica is a trademark of Caballero Control Corporation and is used under license agreement to American Multiple Industries, Inc.
CENSORED
4
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Figure 4.19
1982 ad for AMI's Mystique Presents Swedish Erotica line of games, featuring the tagline "When You Score . . . You Score!" and including a screenshot from the infamous *Custer's Revenge* (bottom right). *Billboard*, October 16, 1982.

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Figure 4.20
Burning Desire screen capture.

the US Army was slaughtering Native Americans, was defeated by Sioux and Northern Cheyenne warriors in a standoff known as Custer's Last Stand. In the game, the character, representing Custer, is "mostly nude, with a crudely rendered erection. On the opposite side of the screen stands a Native American woman tied to a post. Your objective is to guide Custer past various obstacles so he can reach the woman and get his titular 'revenge,'" in other words, rape her.[160]

AMI pulled its games out and folded its operation in early 1983 after cashing what was likely a nice sum of money.[161] But the damage to the market was done. In an October 1983 report on uncensored videogames, *Videogaming and Computer Gaming Illustrated* asked, in a title, "Are Adults Ruining It for the Rest of Us?"[162] The answer was most certainly yes, at least from the standpoint of public relation for the majority of the industry, but the question was asked a year too late. Opening the floodgate, which had been opened with support from the Silicon Valley legal infrastructure, led to market collapse.

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The Market Collapses

Through 1982, Atari actively touted its past success and even brighter future, and so did other players in the exploding home videogame market. Then, on December 8, 1982, at 11:41, on a cool but dry New York City morning, Ray Kassar dumped five thousand shares of Warner for $52.625 a share, grossing the equivalent of $800,000 in today's dollars. Twenty-three minutes later, "Warner announced that its 1982 results would be 'substantially below expectations' due in part to disappointing Atari sales. The price of Warner shares began dropping immediately and fell to $36.25 per share on Dec. 13," losing roughly a third of its value in only four market sessions. Kassar would be charged with insider trading by the Securities and Exchange Commission (later to settle with a slap on the wrist from the government).[163] By October 1983, as *Videogaming and Computer Gaming Illustrated* was asking whether adults were ruining it for the rest of us, Atari had already lost $536 million for the year.[164] That would turn out to be only the tip of the iceberg.

One by one, most industry players collapsed. By the second quarter of 1983, Mattel projected a loss of $100 million for these first six months[165] and, by the third quarter, that number had doubled to $201 million for the first nine months of the year.[166] By then, Imagic had laid off a quarter of its workforce,[167] and Activision was also about to lay off a quarter of its workforce.[168] Kassar was not the only one accused of fraudulent behavior. In the midst of the crash, on June 9, 1983, Activision went public, predicting "that sales for the first half of fiscal year ('FY') 1983 would match sales for the first half of FY 1982 and that sales in the second half of FY 1983 would exceed sales of the second half of FY 1982." Such "groundless hyping" led to a class action lawsuit from members of the public who had bought the shares, when the company was introduced on the market, for $12, only to see it drop 50 percent, to $6, three months after the offering, and then by another two-thirds, to $2, when the case found its way into the court system.[169] Most of these companies would never recover. If some brand names still exist today, it is either because the trademark was bought for salvage value through a variety of mergers, reorganizations, or bankruptcy proceedings, by companies that have nothing to do with the original (Atari, Activision), or because the parent operation was relying significantly on other business lines that were not affected by the home videogame crash (Warner with its music and movie business, Mattel with its toys, including the Barbie doll).

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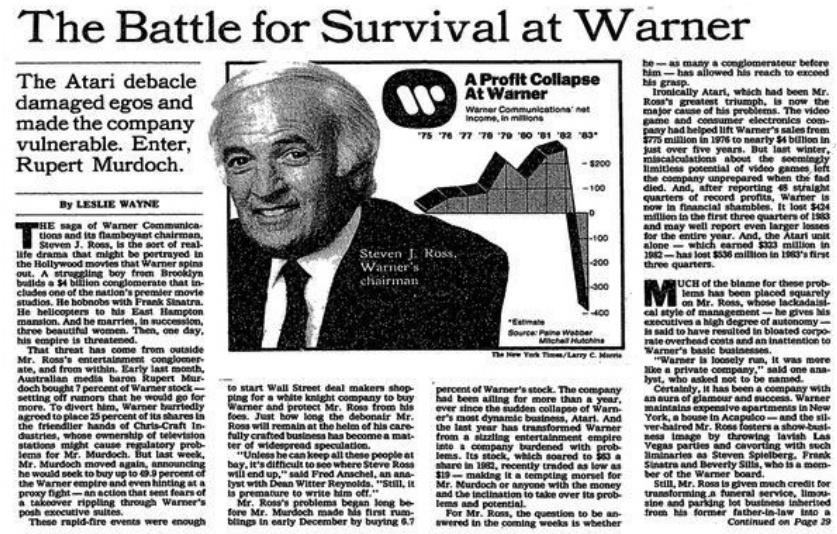

The Battle for Survival at Warner

The Atari debacle damaged egos and made the company vulnerable. Enter, Rupert Murdoch.

By LESLIE WAYNE

THE saga of Warner Communications and its flamboyant chairman, Steven J. Ross, is the sort of real-life drama that might be portrayed in the Hollywood movies that Warner spins out. A struggling boy from Brooklyn builds a $4 billion conglomerate that includes one of the nation's premier movie studios. He hobnobs with Frank Sinatra. He helicopters to his East Hampton mansion. And he marries, in succession, three beautiful women. Then, one day, his empire is threatened.

That threat has come from outside Mr. Ross's entertainment conglomerate, and from within. Early last month, Australian media baron Rupert Murdoch bought 7 percent of Warner stock — setting off rumors that he would go for more. To divert him, Warner hurriedly agreed to place 25 percent of its shares in the friendlier hands of Chris-Craft Industries, whose ownership of television stations might cause regulatory problems for Mr. Murdoch. But last week, Mr. Murdoch moved again, announcing he would seek to buy up to 49.9 percent of the Warner empire and even hinting at a proxy fight — an action that sent fears of a takeover rippling through Warner's posh executive suites.

These rapid-fire events were enough to start Wall Street deal makers shopping for a white knight company to buy Warner and protect Mr. Ross from his foes. Just how long the debonair Mr. Ross will remain at the helm of his carefully crafted business has become a matter of widespread speculation.

"Unless he can keep all these people at bay, it's difficult to see where Steve Ross will end up," said Fred Anschel, an analyst with Dean Witter Reynolds. "Still, it is premature to write him off."

Mr. Ross's problems began long before Mr. Murdoch made his first rumblings in early December by buying 6.7 percent of Warner's stock. The company had been ailing for more than a year, ever since the sudden collapse of Warner's most dynamic business, Atari. And the last year has transformed Warner from a sizzling entertainment empire into a company burdened with problems. Its stock, which soared to $63 a share in 1982, recently traded as low as $19 — making it a tempting morsel for Mr. Murdoch or anyone with the money and the inclination to take over its problems and potential.

For Mr. Ross, the question to be answered in the coming weeks is whether he — as many a conglomerateur before him — has allowed his reach to exceed his grasp.

Ironically Atari, which had been Mr. Ross's greatest triumph, is now the major cause of his problems. The video game and consumer electronics company had helped lift Warner's sales from $775 million in 1976 to nearly $4 billion in just over five years. But last winter, miscalculations about the seemingly limitless potential of video games left the company unprepared when the fad died. And, after reporting 48 straight quarters of record profits, Warner is now in financial shambles. It lost $424 million in the first three quarters of 1983 and may well report even larger losses for the entire year. And, the Atari unit alone — which earned $323 million in 1982 — has lost $536 million in 1983's first three quarters.

MUCH of the blame for these problems has been placed squarely on Mr. Ross, whose lackadaisical style of management — he gives his executives a high degree of autonomy — is said to have resulted in bloated corporate overhead costs and an inattention to Warner's basic businesses.

"Warner is loosely run, it was more like a private company," said one analyst, who asked not to be named.

Certainly, it has been a company with an aura of glamour and success. Warner maintains expensive apartments in New York, a house in Acapulco — and the silver-haired Mr. Ross fosters a show-business image by throwing lavish Las Vegas parties and cavorting with such luminaries as Steven Spielberg, Frank Sinatra and Beverly Sills, who is a member of the Warner board.

Still, Mr. Ross is given much credit for transforming a funeral service, limousine and parking lot business inherited from his former father-in-law into a

Continued on Page 39

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Figure 4.21
This 1984 *New York Times* article, which explains how Warner has "been ailing for more than a year, ever since the sudden collapse of [its] most dynamic business, Atari," includes a telling infographic of Warner's stock. The tipping point is the day Kassar dumped its shares. Leslie Wayne, "The Battle for Survival at Warner," *New York Times*, January 8, 1984, section 3, p. 1.

A variety of factors contributed to the videogame-market crash of 1983. Some are circumstantial, some systemic. Much has been written about it.[170] The factor of particular importance here, because it explains subsequent moves by Nintendo and Sega and the resulting litigation history we are about to embark on, is the unbridled manufacturing of third-party software for consoles that started with the *Atari v. Activision* affair. On one hand, the ability for third parties to create software for a computing platform (in this case, the platform is the console, but it could be any hardware, such as a personal computer) creates positive network externalities: more games means more choice for consumers, who are therefore more likely to buy the platform that has the most games. In turn, the more owners of a platform, the more potential customers for game developers, who are therefore more likely to create new software for that platform and not another. A more recent example of this mechanism is the Apple iPhone and its App Store. But unbridled production

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also had negative effects. Not everyone can create great games, and certainly not at a fast pace. The game quality rapidly became poor, a trend exacerbated by the extreme competition and the pressure on developers to churn out new games cheap and fast. Many customers grew disappointed after buying poor-quality games. Add to that the negative press (Atari sued AMI over *Custer's Revenge*, saying it damaged its reputation, adding that Atari stood for "wholesome family entertainment").[171] And overproduction led to a retail-price crunch (lots of games were eventually sold by retailers at a heavy discount), making it impossible for developers to recoup their costs, especially with an ever-shrinking piece of the pie for each of them (only so many people buy games, and those who do buy only so many games each year, so when the number of game publishers increases, each of their piece of pie shrinks.) So as Nintendo and Sega geared up to launch their NES and Genesis/Mega Drive, respectively, they had two economic lessons in mind when it came to the software for their machines: control quality and control quantity. How to achieve that and prevent a flurry of game developers to port the Atari experience to their platform? Absent broad patents, the answer could not come from the law. It had to come from technology. That technology would be called a lock-out chip. "It was the only way we could assure that there would be consistent, quality software," said Howard Lincoln, Nintendo's vice president and general counsel.[172]

The legal infrastructure of Silicon Valley had facilitated the emergence of the third-party videogame software industry. In an attempt to go back to the days when they had control, console manufacturers would turn to engineers (chapter 5). When computer scientists got defeated by other computer scientists, it was once again the *legal* engineers who took the lead in our never-ending dance (chapter 6).

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5 The Engineer's Corner: How Does One "Break" a Lock-Out Chip? A Primer on Reverse Engineering of Software for English Majors

An Engineer's Solution to a Legal Problem: Inventing the Lock-Out Chip

A lock-out mechanism is an ensemble of software code that is burnt into two special-purpose chips. One, commonly called the "lock-out chip," is placed inside the console. That piece of software, embedded in silicon, looks for another piece of software, an unlocking key, which is itself burnt into another special-purpose chip added to the game cartridge. When a game cartridge that contains the key is inserted into the console, the key and the lock shake hands, and the key opens the lock. The console plays the game. When a game lacks the key, the lock does not open, and the console will not play the game. The source code of the software embedded in both chips is kept secret by the console platform owner. To keep the keys a trade secret, the console platform owner burns them into the chips in a form that is understandable by machines but not by humans. To ensure even further protection of these secrets, both Nintendo and Sega, who pioneered the system, manufactured the third-party game cartridges themselves, before selling them to the licensees who in turn distributed them through toy and computer stores.[1] If I wanted to make a game for the NES, I would need to deliver my code to Nintendo, who would add the secret key to it, burn the whole thing on a cartridge bearing my name, and hand that cartridge to me so I could then sell it through my own distribution circuit. Not efficient, but effective, as far as keeping the source code of the lock-out system a secret. In addition to preventing the creation of unauthorized third-party software, lock-out chips provided two extra benefits. One was to curb counterfeiting of original games, that is, the mass producing of illegal copies for resale. This factor would explicitly be invoked by Sega. The other is that lock-out chips enable

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geographic versioning of products (similar to DVDs or geo-localization of users on the internet, for example by streaming platforms), which offers multiple marketing benefits, such as price differentiation and tailoring of content to local tastes and/or content regulations (as we explore in chapter 9).

Many in the third-party game development world took issue with this model, for several reasons. First, Nintendo required a two-year platform exclusivity for its licensees. The cost of admission to the NES platform meant that a third-party developer could not also develop the same game for competing consoles for that period of time, which limited the size of their overall customer base. Second, the model implied a loss of control by the developer over the manufacture of cartridges, since Nintendo, and later Sega, was the party that would manufacture, and then resell, the cartridges to the licensee. Third, Nintendo drastically limited the number of games it licensed each year, five per licensee.[2] Nintendo argued that this was to ensure quality of games and to avoid overproduction, two factors that had led to the market crash of 1983. Many game developers felt instead that Nintendo used this system to impose unfair deals. With the morality of Nintendo's behavior set aside, the result is that game developers who couldn't get approved, couldn't pay, or otherwise had strong feelings against entering the system[3] had an incentive to find a way to create unapproved cartridges that would nonetheless work when plugged into the console.

Two notable companies to break locks were Accolade and Atari-Tengen. Accolade had been founded in 1984 by Alan Miller and Bob Whitehead when they left Activision following the crash. Atari was not the same corporation that had manufactured the VCS. After the crash, Warner dumped the Atari assets, which had crimped its overall business. Atari, Inc., was split into two entities. The consumer business, meaning consoles and computers, was sold to Jack Tramiel, the founder of Commodore, and became Atari Corporation in 1984.[4] Tramiel also acquired the rights to the brand "Atari" for all consumer products including console cartridges. Atari's coin-op division (pinball and video arcade machines) briefly remained with Warner before being sold to Namco in 1985, and then started doing business under the brand "Atari Games." The agreement with Tramiel was that Atari Games could not use the Atari brand other than in the coin-op market. So when Atari Games decided to become a third-party developer of console cartridges, it had to create a new brand. On December 21, 1987, it spun out a subsidiary for that purpose,

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which it named Tengen, Inc.[5] For the remainder of this book, I refer to this spin-off entity as "Atari-Tengen."

How does one achieve the trickery? How does one "'unlock' the base unit by appearing to be a licensed game cartridge?," or, more poetically speaking, produce a game cartridge "capable of generating the correct mating calls?"[6] Generally speaking, what exactly is reverse engineering of software?

Source Code, Object Code, and Assembly Language

Figure 5.1 maps the software reverse-engineering process described in the discussion. Refer to it as needed as you read through the next few pages.

Remember that the chip is only a vessel. What matters in the lock-out system is the *software* embedded in the silicon. When creating software, programmers start with a high-level coding language, which uses alphanumeric characters and is readable, and understandable, by other humans. Over the years, such languages have taken names such as FORTAN, COBOL, PASCAL, C, C++, BASIC, JAVASCRIPT, or PYTHON, to name just some of the most recognizable ones. The programmer adds to this code a number of notes, comments that are designed to be read by other programmers in the future, for the purpose of understanding the original programmer's train of thought, for example when debugging the software. The combination of the code and the notes is called the *source code*. This source code is then transformed into a computer-readable code, called the *object code*, which is a long string of 0s (zeroes) and 1s. The transformation from source code to object code is

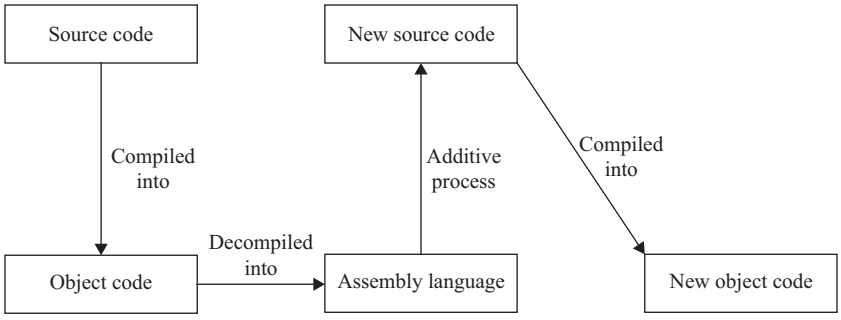

Figure 5.1
The software reverse-engineering process.

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performed using a piece of software called a *compiler*. The compiler *strips* the source code from the elements the machine is not interested in (the programmer's notes) and *adds* a number of instructions in order to optimize the program. This process is called *compiling*, or *assembling*. The resulting sequence of 0s and 1s is understandable by the computer that will read it, but not by humans, not even by the original programmer. In the case at hand (lock-out chips and game cartridges), this object code is then burned as an integrated circuit into a chip, the read-only memory (ROM) chip. At this point it is called *firmware*. The source code, the object code, and the firmware are all copyrighted, which means that no one can copy them without permission of the copyright owner (in this case, Sega and Nintendo), lest they commit copyright infringement, unless such copy falls within a limited number of exceptions under the Copyright Act, such as "fair use," a concept at the heart of the Atari-Tengen and Accolade defenses.

Unless the program is made available as open-source software (which is not the case here), the source code is held as a trade secret. The programmer who wishes to reverse engineer the software must then start from the only commercially available piece of forensic evidence, that is, the ROM chip that contains the object code; in this case, the game cartridge that contains the mating call that will unlock the console. First, the programmer must extract the object code, that list of 0s and 1s. To do so, two main options exist. The first is to read that code from the ROM using a so-called debugger program.[7] This is what Activision had done to reverse engineer the VCS Stella chip, according to Whitehead,[8] and what Accolade would do to Sega's lock-out chip. Sometimes, however, "the program in the ROM is not even accessible to the programmer through standard means [that is, the debugger], and it is necessary to remove the ROM from the [cartridge], have it opened and chemically peeled down to the proper layer of silicon, and then photographed under magnification up to 1200 times. Someone skilled in reading the silicon layers and traces on the chip must then read out the 1's and 0's laboriously, one by one, and make a copy of the contents."[9] This second option is the one Atari-Tengen started its process with.

Once the 0s and 1s have been extracted through either of these two methods, the reverse engineer has another set of two options: either look at the strings of 0s and 1s and try to make sense of them, or copy them and load them into a computer so it can make sense of them on her behalf. The first option is not practical because of the size of computer programs.[10] For example, in

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1992, "a typical program might contain 500,000 instructions—347 days' worth of deciphering." Therefore, this process must be mechanized, something that is done by simply copying the object code into a computer, where another piece of software called a *decompiler* turns the object code into something that is human-readable, called *assembly language*. This process is called *decompiling*, or *disassembling,* and the resulting document is called a disassembly listing.

It is key to understand that this assembly language code is not a copy of the source code. It is not possible to make a copy of the source code working from the object code, because in the original process of compilation, many instructions have been added, other have been reshuffled, and many have been stripped. The original instructions cannot be extracted from the object code. The assembly-language code, then, while being human readable, is only "a mere faint echo of the source code."[11] Armed with this code, the reverse engineer must now create a brand-new source code, using her programming skills and her power of extrapolation. The idea is to create a new code, which will trigger the same result as the original source code when read by the other part of the lock-out mechanism, which sits in console.

That new source code is then compiled into a new object code, which is not a copy of the original object code but something original. This object code is then burned into a new game cartridge, which is inserted into the console. If the programmer has succeeded, this new firmware sings a mating song that is close enough to the original one that the lock-out chip inside the console is fooled, shakes hands (accepts the unlicensed software as licensed), unlocks the console, and plays the game.

A Culinary Metaphor

It is useful at this point to use a culinary metaphor to make further sense of this all. Here, I draw from the work of Andrew Johnson-Laird, who served as expert witness for Accolade in its case against Sega, and who offered this and other useful metaphors in the many engineering articles he has crafted specifically for lawyers.[12] Of course, as we usually conclude in law reviews' "thank you" sections, all errors are mine alone.

Suppose that instead of wanting to compete in the market for Nintendo or Sega game cartridges, you are a steak sauce manufacturer who wants to compete with A.1. steak sauce (for non-US readers, A.1. is a staple steak sauce

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produced by Heinz, the leading brand of tomato ketchup). Your job is to trick the consumer into thinking that your sauce is as good as Heinz's, so they will buy your product for use in conjunction with their steak (the equivalent of the game console), rather than Heinz's. You are trying to make sure that the combination "steak-plus-your sauce" tastes as genuine as the combination "steak-plus-A.1. Sauce."

Unfortunately, you do not have the source code of the sauce (the "sauce code"),[13] because that is kept as a trade secret by Heinz. So, you turn to the commercially available product, that is, the A.1. Sauce itself. The sauce is the equivalent to the object code: it is the result of the processing of the sauce code by a series of industrial machines, using various natural and chemical components, in certain orders, at certain temperatures and pressure levels.

Now, having bought the sauce, you can analyze it using a machine called a gas chromatograph, to find out what compounds are in the sauce. The chromatograph that performs the analysis, a process equivalent to decompilation of the computer object code by the debugger, will give you this result in a human-readable format, the equivalent of our assembly language. That result is not the original sauce code, just as the assembly language document is not the original source code. All our reverse-engineer cook gets at this point is a list of components that are in the sauce, but no information about how they were mixed to arrive to this particular result. In order to re-create a sauce that is equivalent to the A.1. Sauce, our cook must now experiment, using his intuition and skill set as a cook / food chemist. Only then can he create a new recipe, a new and original sauce code, which, once processed (compiled) into a new, original sauce, will satisfy the consumer that this competing sauce is good enough for the steak. At which point the steak and the new sauce will happily mate.

Just like with our computer codes, where the assembly language and new source code were not actual copies of the original source code, and where the new object code was not an actual copy of the original object code, our new sauce code and new steak sauce are not actual copies of the original either. Overall, then, neither the new sauce code and the new sauce nor the new source code and the new object code infringe on the copyright of the original product. This is a fact contested neither by sauce makers nor by large software firms.[14] As Johnson-Laird explained, "A software reverse engineer does not copy software. Rather, an individual who engages in reverse engineering uses an additive process, starting with material at a low level of abstraction,

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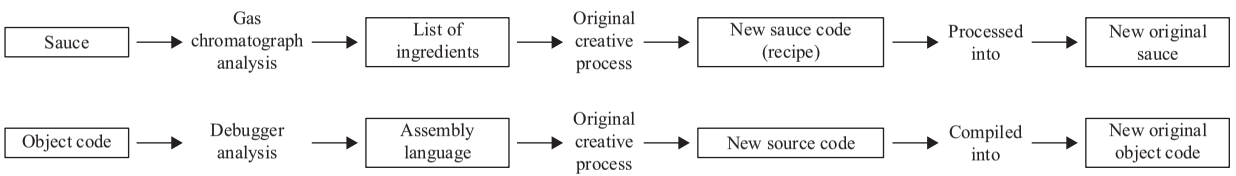

Figure 5.2
Comparison table of the reverse-engineering process in the case of a sauce (top) and of software (bottom).

adding material at a high level of abstraction based on his or her own skill. As a result, the software engineer thereby divines the 'ideas, procedures, process, system, method of operation, etc.' based largely on information that is simply not present in the original computer readable version of the computer program."[15] The source code can simply not be re-created.[16]

Why, then, did Sega and Nintendo sue Accolade and Atari for copyright infringement? That is because at two points in the process, the reverse engineer needed to make *temporary copies* of copyrighted materials, something called *intermediate copying*. This intermediate copying occurred at two points of the process.

The first instance of intermediate copying occurs when the *object code* is extracted from the chip (either using a debugger or chemically peeling the chip). It must then be copied into the memory of a computer in order to be decompiled. Any copying, under the Copyright Act, is copyright infringement, unless the copyright owner has given permission for the copying, or unless it falls under a number of exceptions, such as "fair use." Because the Copyright Act did not create an explicit fair use exemption for intermediate copying, both Sega and Nintendo argued, then the process of reverse engineering involves copyright infringement even though the final products themselves do not infringe on the original source and object codes' copyrights.

The *assembly language* code, extracted from the original object code through the process of decompilation, is itself a *derivative material* protected by copyright. Copying it during the reverse-engineering process (the second instance of intermediate copying), constitutes copyright infringement, Nintendo and Sega argued.

This is the gist of the legal arguments brought forth by Sega and Nintendo. At stake with these two cases, then, was not just the legality of temporarily copying object code and assembly language materials for the reverse engineer's own purpose and without public distribution of such copies. These arguments were just a *technical legal trick*, developed through *legal engineering*, to attack *the very process of reverse engineering* in general, because reverse engineering cannot be performed without resorting to intermediate copying. That legal issue had been the subject of considerable debate since the Copyright Act passed in 1976.[17] So, to say that these two cases got a great deal of attention from the legal and engineering communities is an understatement.[18] As we will see in chapter 6, the *Sega v. Accolade* and *Atari Games (Atari-Tengen) v. Nintendo* cases had and continue to have enormous impact on the software industry.

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6 Are Your Lawyer's Hands Clean? Legal Responses to the Reverse Engineering of Lock-Out Chips

Lock-out chips had been an engineering answer to a legal infrastructure that supported the unbundling of the early console-plus-cartridge industrial model and the emergence of the third-party videogame software industry. As a reaction to this attempt to rebundle the industry, third-party developers answered with another engineering response: the reverse engineering of the lock-out chip. The next step in the dance came from the console manufacturers and took the form of *legal engineering*: the creation of new legal arguments, based on copyright law, which, they hoped, would outlaw a practice that Atari's lawyers had previously been unable to prevent when Activision was formed.

We first look at the two landmark cases in this field, *Sega v. Accolade* and *Atari Games (Atari-Tengen) v. Nintendo*. Then, we turn to the long-lasting impact these cases have had on the videogame industry, with a focus on emulation.

Before we move to the cases, one might wonder: Why did Sega and Nintendo chose to take the copyright law avenue, when we have seen in chapter 2 that patent law is a powerful tool for monopolizing a technology, and the weapon of choice in the first decade of videogame litigation?

Why Sue on Copyright Rather than on Patent Grounds?

This shift to copyright-based litigation strategies occurred for several reasons.

First, one might not be willing to secure a patent. Patent prosecution (the process of *obtaining* a patent) is complex, lengthy, and expensive. *Enforcing* an existing patent can also be extremely expensive, in part because it requires hiring experts to testify and paying extensive hourly lawyer bills. This explains, for example, why Atari, in the Bushnell/Alcorn days, did little to secure and defend intellectual property, preferring instead to allocate resources to constant and aggressive innovation (see chapter 7).

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Second, not everything can be patented. Inventions must be new, useful, and nonobvious. As we have discussed in chapter 2, the existence of prior art, that is, a previous, similar invention, can "block a patent" (prevent it from being granted by the government). So can the multitude of bars our fictional law student applied to Nolan Bushnell's *'483* patent in chapter 3. Further, not every type of invention is eligible for patent protection to start with: only machines, processes, manufactures, and composition of matter are eligible; specifically excluded from patentability are abstract ideas and laws of nature. Although the 1980s and 1990s saw a boom in the number of software patents issued, it was not always clear that software could be patented to begin with.[1] And, in the landmark 2014 *Alice* case,[2] the Supreme Court invalidated a software patent because it was a mere "generic computer implementation" of an algorithm, which failed "to transform that abstract idea into a patent-eligible invention."[3] The jury is still out on the future of software as patentable subject matter. Therefore, it does make sense for a software creator to pursue other avenues of intellectual property law, such as copyright, to protect their work.

Third, a company might actively oppose the very principle of patentability of software and, as a result, seek another legal ground for curbing competition. Such was the case of IBM in the mid-1960s: "IBM's long-standing entanglements with antitrust law (which precludes anticompetitive behavior) had resulted in important limitations on its ability to profit from its patents and use them to exclude competitors from a given invention. Because IBM distributed programs through bundling—free of charge with the purchase or lease of its hardware—its managers preferred to lose the ability to secure patent protections for their programs than face an industry wherein small and highly litigious firms could use software patents offensively against IBM."[4] Not having a patent can make it easier for a firm to fend off accusations of illegal anticompetitive behavior. We will return to the relationship between patent law and antitrust law at the end of this chapter.

Whichever the reason, many systems in the world of videogames are not protected by patents. This was the case of the Sega lock-out chip and software system, which explains why Sega attacked Accolade on copyright grounds instead.[5] And, even if a software-based system is protected by a patent, as was the case of the Nintendo 10NES apparatus, why not double-dip if one can? Patent protection is very strong, but also relatively short (twenty years

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from the time of filing, nowadays, seventeen years from the time of issuance at the time the cases at stake were litigated). In contrast, copyright protection is free to obtain (because it is automatic and does not even require any filing with the federal government) and remains in force for the life of the author plus seventy years.[6] As early as the 1960s, software inventors began relying on patents and copyright simultaneously.[7] Because it was "unsure of how to classify software as a creative work, the Copyright Office registered all computer programs as books or pamphlets and offered them the protections normally afforded to literary works."[8] Hence, the ability for many firms to double-dip on two distinct legal regimes, each with its own advantages.

We start with Sega and its Genesis console, known outside of North America as the Mega Drive, first introduced in Japan in 1988 and in the United States in 1989. We continue with Nintendo and its NES, which is a strange case because of Atari-Tengen's lawyers' behavior, as we'll discover. Both cases raise the same legal issue when it comes to copyright law but were litigated through different courts for technical reasons. Nintendo held a patent on its chip, so the case was appealed before the Federal Circuit, even in its copyright dimension, because that circuit has exclusive jurisdiction, on appeal, over patent matters. Sega did not hold a patent on its technology, so the case remained in the Ninth Circuit. Because the cases were litigated concomitantly, however, they cross-reference each other.

What we learn from these cases is twofold:

- Intermediate copying in the process of reverse engineering is, under certain caveats, permissible as "fair use" under copyright law. This strengthened the third-party software industry, even in the era of the lock-out chip.
- Lawyers are human beings capable of error. These errors can, as they did with Atari-Tengen, lead to their client's demise, even when the law was supposed to be on the client's side—two cases, one legal principle, two different fates.

Sega Enterprises v. Accolade, Inc.

The Facts

On October 31, 1991, Sega Enterprises Ltd. ("SEL"), sued Accolade, Inc. in the US District Court for the Northern District of California, in San Francisco,

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where many cases involving Silicon Valley are heard.[9] According to the court records,

> in 1989, Accolade "reverse engineered" the video display microprocessor in the Genesis console by disassembling the code in SEL's game cartridges so that it could develop and market Genesis-compatible videogames. In June 1990, Accolade announced that it was releasing a new game for the Genesis console, "Ishido," and began shipping in December 1990. At about the same time, SEL developed a system to protect its trademark rights in response to counterfeiters in the United States and abroad. In March 1990, SEL licensed a patented process for the trademark "security system" ("TMSS") by which the console's operating system "reads" a game program for specific computer code. If the game program contains the TMSS initialization code, it prompts a visual display on the monitor which reads "PRODUCED BY OR UNDER LICENSE FROM SEGA ENTERPRISES LTD" (the "Sega Message"). Although the new Genesis consoles with the TMSS ("Genesis III") were not released in the United States until September 1991, Accolade learned of the Genesis III in January of 1991 when it was displayed at the Consumer Electronics Show ("C.E.S."). It was also demonstrated at the C.E.S. that the Ishido game did not operate on the Genesis III. In response, Accolade disassembled and copied more SEL programs looking for the common code that could be part of the TMSS and which it thought might be functional. Accolade then copied that code and included it in its videogame programs, which now prompt the Sega Message when played on the Genesis III console.

Sega claimed that

> Accolade has infringed its copyrights, because its Genesis-compatible games are based upon illegal reproductions and adaptations of SEL's copyrighted works. The alleged illegal copying was accomplished as follows according to deposition testimony of Accolade's engineers: 1) the object code in SEL's copyrighted game programs was disassembled and translated into assembly language; 2) Accolade made intermediate copies of this derivative material and "embellished" it; and 3) Accolade wrote game programs based upon the allegedly illegal reproduction.[10]

The significance of the lawsuit was that, if Sega won, third-party software developers would be legally precluded from making game cartridges for the Genesis/Mega Drive. Sega would achieve what Atari, ten years before, had failed to do: keep its console-plus-cartridge combination bundle, by operation of law.

The core legal issue was whether the intermediate copying of the object code and of the assembly code, prohibited on the Copyright Act's face because not authorized by the copyright owner, consisted in copyright infringement or, instead, could be excused under the "fair use" doctrine.

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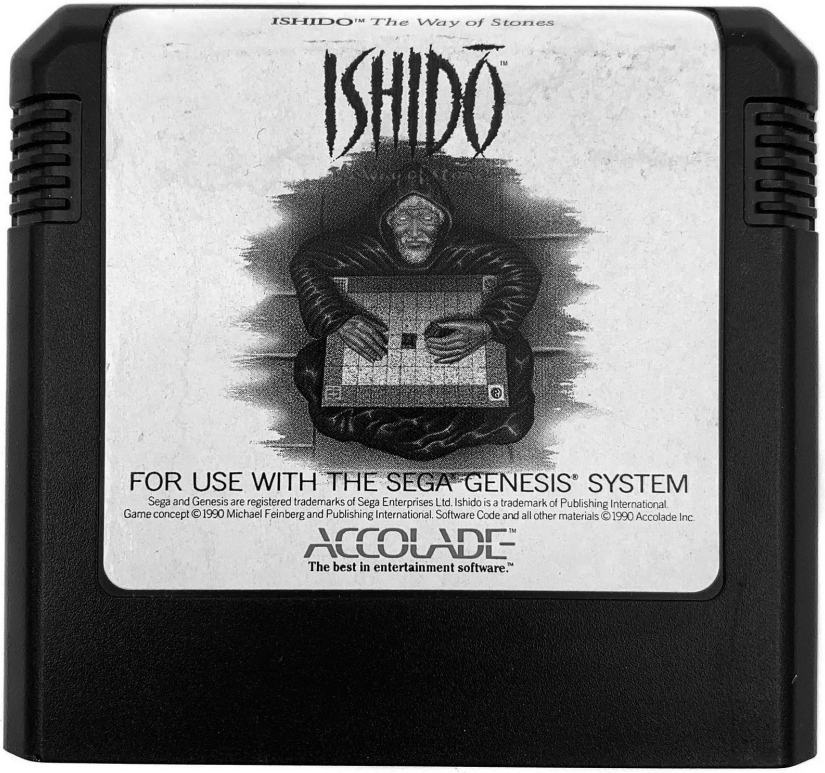
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Figure 6.1
Accolade's Ishido cartridge at stake in *Sega v. Accolade*.

The Fair Use Principle

Under the Copyright Act, codified under what is known as *Section 107*, "the fair use of a copyrighted work . . . *for purposes such as* criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright."[11] The definition seems straightforward, but its application is not. Congress gives us a list of permissible purposes but does not explicitly limit these permissible purposes to that list: "for purposes *such as*." This gives courts the ability to discover new permissible purposes, and lawyers plenty of leeway to make creative arguments. Congress also gives us a variety of factors to use "in determining whether the use made of a work in any particular case is a fair use," but does not provide us with the formula for weighing these factors. They "shall include"

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(1) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;
(2) the nature of the copyrighted work;
(3) the amount and substantiality of the portion used in relation to the copyrighted work as a whole; and
(4) the effect of the use upon the potential market for or value of the copyrighted work.

In every case, the judge must make a determination on an *ad hoc* basis of whether a use is fair, based on the facts at stake and on guidance from case law.

In the present case, the District Court judge, Barbara Caulfield, ruled that the copying of Sega's code by Accolade did *not* constitute fair use, and therefore did constitute copyright infringement. To reach that conclusion, she relied on two main lines of reasoning. First, looking at the explicit (but not limitative) list of permissible fair use purposes (criticism, comment, news reporting, teaching, scholarship), she noted that the Copyright Act "does not provide an exception for intermediate copying of software for the purpose of 'reverse engineering.'" Referring to one statement contained in the legislative history of the Copyright Act, she inferred that the *lack of explicit inclusion* of reverse engineering of software in the list of fair use exceptions meant that Congress *intended to exclude* reverse engineering from fair use under the Copyright Act.[12]

Accolade could have peeled Sega's physical lock-out chip in order to reverse-engineer it and, Judge Caulfield wrote, that would have been perfectly permissible. Because Sega instead chose to "disassemble, reproduce and enhance" Sega's software in order to reach the same end result as with the physical peeling, then they were guilty of copyright infringement. A second element Judge Caulfield relied on to consider that Accolade's behavior did not fall within the fair use exception is the combination of the first and fourth of the criteria provided by Congress as a guideline: "the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit education purposes," and "the effect of the use upon the potential market for or value of the copyrighted work." To reject the protection of fair use for Accolade, she pointed out that "the copying at issue here was undertaken by Accolade for financial gain and was aimed at the creation of a competitive product which will adversely impact the value of the copyrighted work. . . . Accolade's game cartridges compete directly with

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those of SEL, which has likely lost sales as a result of Accolade's copying." This reasoning is flawed, as we will soon find out.

Aware of the importance of the case for the industry as a whole, Judge Caulfield attempted to minimize its scope: "Accolade attempts to frame the issue in terms of the permissibility of reverse engineering. SEL does not contend that reverse engineering is itself improper. Rather, the issue is whether the means employed infringed SEL's copyright." And to restate that, just like Atari-Tengen had peeled Nintendo's chips—something allowed by the Semiconductor Chip Protection Act—Accolade could have done the same: "Such alternative methods are more time-consuming and expensive, but Accolade does not suggest they are impossible."[13]

The case, of course, was an attempt by the console manufacturers to prohibit the development of compatible software for their hardware *as a matter of principle* and, as such, to monopolize the industry. Having failed to achieve this result through trademark and trade secrets law (chapter 4), and absent broad patents, they developed technical locks. When these, inevitably, were broken, they turned back to the law, this time developing new arcane technical arguments based on copyright. The broad software and legal industries, unlike, evidently, Judge Caufield, did not miss this. At a legal industry seminar titled "Scope of Protection of Computer-Based Works" held in San Francisco just a month after Caulfield's ruling, a key speaker noted, "The decision as it presently stands would make any form of reverse engineering of computer software an impossibility, and would make it impossible to develop compatible or interoperable products in the computer industry. The consequences of it could be like a tidal wave over the industry when the effect on competition and standards are considered."[14] And, with that, Accolade appealed.

The Appeal

The case landed before a panel of three judges led by Judge Stephen Reinhardt of the Court of Appeals for the Ninth Circuit.[15] In a lengthy but clear opinion, Judge Reinhardt debunked Sega's arguments and Judge Caulfield's reasoning to find that *as a matter of law*, and "based on the policies underlying the Copyright Act," disassembly of copyrighted object code is "a fair use of the copyrighted work if such disassembly provides the only means of access to those elements of the code that are not protected by copyright and the copier has a legitimate reason for seeking such access." Reverse engineering of software, when it is the only practical means of circumventing

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lock-out chips, does not violate copyright laws. Judge Reinhardt developed his reasoning carefully.

He turned to the first and fourth criteria established by Congress to determine whether something constitutes a fair use: "the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit education purposes," and "the effect of the use upon the potential market for or value of the copyrighted work." Judge Caulfield had ruled that these factors weighed against fair use and in favor of Sega because "Accolade's game cartridges compete directly with those of SEL, which has likely lost sales as a result of Accolade's copying." Reinhardt found otherwise.[16] Let us examine his reasoning following the same systematic steps he used.

Step 1 Regarding the first factor, he pointed out that the copying had taken place only to enable Accolade "to discover the functional requirements for compatibility with the Genesis console—aspects of Sega's programs that are not protected by copyright." Another way to think of this complicated legal analysis is this: if Accolade had copied Sega's code of a specific game, in order to program its own clone of the same game, then the criteria would have played against Accolade. But because "the use at issue was an intermediate one only and thus any commercial 'exploitation' was indirect or derivative," because the only purpose of the copying was to break the lock of the *console*, not to compete with any particular *game* of Sega's, then the criteria weighed in favor of fair use. Reinhardt also noted that, in order to determine whether the use was "fair," the public benefit of the copying at stake should be taken into consideration. In this case, he noted, "Accolade's identification of the functional requirements for Genesis compatibility has led to an increase in the number of independently designed videogame programs offered for use with the Genesis console. It is precisely this growth in creative expression, based on the dissemination of other creative works and the unprotected ideas contained in those works, that the Copyright Act was intended to promote."

Step 2 Reinhardt continued his astute economic analysis of the third-party game development market as he analyzed the fourth criteria, "the effect of the use upon the potential market for or value of the copyrighted work." He noted that

> Accolade did not attempt to "scoop" Sega's release of any particular game or games, but sought only to become a legitimate competitor in the field of Genesis-compatible videogames. . . . By facilitating the entry of a new competitor, the first

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> lawful one that is not a Sega licensee, Accolade's disassembly of Sega's software undoubtedly "affected" the market for Genesis-compatible games in an indirect fashion. We note, however, that while no consumer except the most avid devotee of President Ford's regime might be expected to buy more than one version of the President's memoirs, videogame users typically purchase more than one game. There is no basis for assuming that Accolade's "Ishido" has significantly affected the market for Sega's "Altered Beast", since a consumer might easily purchase both; nor does it seem unlikely that a consumer particularly interested in sports might purchase both Accolade's "Mike Ditka Power Football" and Sega's "Joe Montana Football", particularly if the games are, as Accolade contends, not substantially similar. In any event, an attempt to monopolize the market by making it impossible for others to compete runs counter to the statutory purpose of promoting creative expression and cannot constitute a strong equitable basis for resisting the invocation of the fair use doctrine.

What we observe here is a clever application of economic analysis by a judge, a process that is far from easy and, if not mastered, can lead to both bad *legal* results and bad *policy* results. Where Judge Caulfield had simply bought, and amplified, Sega's lawyers' reasoning, Judge Reinhardt concluded that "notwithstanding the minor economic loss Sega may suffer," fairness, and the consumer's interest, weighed in Accolade's favor.

This case shows that where the law and economics intersect, matters get complex, and the lack of sophistication of one human being can create significant inflection points in an industry's trajectory.

The same is true when it comes to sophistication in understanding very complicated, and often novel, technical matters and applying to them equally complicated, and often very old, legal principles. In this context, Judge Reinhardt extended his reasoning to a statutory criterion for fair use that Judge Caulfield had overlooked, "the nature of the copyrighted work."

Step 3 Here, he returned to a time-honored legal concept we discussed in the context of the *Pac-Man* clone case, that of the "idea/expression distinction," which determines the extent of copyright protection. "Not all copyrighted works are entitled to the same level of protection," he reminded us. "Works of fiction receive greater protection than works that have strong factual elements . . . or works that have strong functional elements, such as accounting textbooks." Indeed, gobblers and monsters are expressive and therefore protected by copyright, but not the functional idea of a maze game. "In some circumstances," the judge continued, referring explicitly to "external factors such as compatibility requirements and industry demands," "even the exact set of commands used by the programmer is deemed functional rather than

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creative for purposes of copyright. 'When specific instructions, even though previously copyrighted, are the only and essential means of accomplishing a given task, their later use by another will not amount to infringement.'" The difficulty here lies not just with the fact that "computer programs pose unique problems for the application" of old legal principles, but also with the fact that human nature's tendency and, hence, judges' tendency too often is to "fit the proverbial square in a round hole," as Reinhardt pointed out.

Step 4 At this point, Reinhardt addressed Sega's contention that other means than the disassembly of its object code, such as chip peeling, which did not infringe on its copyright, were available to Accolade, and that fair use should therefore not apply. Remember that Judge Caulfield had agreed with that line of reasoning: "Accolade attempts to frame the issue in terms of the permissibility of reverse engineering. SEL does not contend that reverse engineering is itself improper. Rather, the issue is whether the means employed infringed SEL's copyright. . . . Alternative methods [such as chip peeling] are more time-consuming and expensive, but Accolade does not suggest they are impossible." Reinhardt, in contrast—in an opinion that reveals his subtle understanding of the technology at stake—trashed Sega and the District Court's position: "An independent examination of the record reveals that Sega misstates its contents, and demonstrates that the district court committed clear error in this respect." Referring to expert witness' testimony, Reinhardt noted "that chip peeling yields only a physical diagram of the object code embedded in a ROM chip. It does not obviate the need to translate object code into source code." And that process of "translation of a program from object code into source code cannot be accomplished without making copies of the code."

Tying Engineering, Economics, and the Law Together

As we've explained earlier, indeed, "because object code cannot be read by humans, it must be disassembled, either by hand or by machine. Disassembly of object code necessarily entails copying." And here, Reinhardt cleverly made the last turn, from technology to economics, to tie the legal analysis together:

> If disassembly of copyrighted object code is per se an unfair use, the owner of the copyright gains a de facto monopoly over the functional aspects of his work—aspects that were expressly denied copyright protection by Congress. In order to enjoy a lawful monopoly over the idea or functional principle underlying a work, the creator of the work must satisfy the more stringent standards imposed by the patent laws. Sega does not hold a patent on the Genesis console.

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In the end, the court concluded that because Accolade "had a legitimate reason to understand the program's functional elements (to make its games compatible with [Sega's] system), and no other means of access existed, [Accolade's] disassembly constituted fair use of the copyrighted work under the Copyright Act." Of broader import for the industry, Sega and Accolade set aside, this ruling decisively established that "where there is good reason for studying or examining the unprotected aspects of a copyrighted computer program, disassembly for purposes of such study or examination constitutes a fair use," which can be used as a defense to allegations of copyright infringement.

What Judge Reinhart saw was that Sega was attempting to weaponize copyright law to create a legal monopoly over a technology that only patent law can confer. To reach his seemingly simple conclusion, the judge had to perform a complex analysis of multiple entangled factors:

- What exactly is the endgame of the copying of software: to create code that will compete with the original code, or to be able to design games compatible with a hardware platform?
- What are the economic forces at work, and how is the public affected by the newly enabled competition?
- What are the technical implications at play? Are other means of reverse engineering actually practical?

Let us turn to the *Atari Games (Atari-Tengen) v. Nintendo* case. This case is key in demonstrating that the role of individual lawyers, as human beings, with their strengths *and flaws*, should not be understated when examining industries' histories. In the case of Atari-Tengen, human blunder would have a dramatic impact on the company's fate.

Atari Games Corp. v. Nintendo of Am., Inc.

As a reminder of the discussion at the beginning of chapter 5, Atari Games Corp. was the part of the old Warner Atari, sold to Namco in 1985, that specialized in coin-op machines. Atari Games Corp. was not allowed to use the brand "Atari" for console cartridges. When it entered the third-party manufacturing business, it created a subsidiary, which it named Tengen, Inc. It is Tengen that reversed engineered Nintendo's lock-out chip. When Nintendo sued, it sued both the parent company, Atari Games, and the subsidiary, Tengen. Because court case names are shortened, the reference is simply *Atari*

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Games Corp. v. Nintendo of Am., Inc. Nonetheless, it targets the actions of Tengen. For this reason, I refer to the case and to the joint defendants as "Atari-Tengen" throughout the book.

The Court Applies the Same Legal Principles as in *Sega v. Accolade*

The facts in the Atari-Tengen case were slightly different from the Sega case, but the legal question that pertains to our discussion was the same: can a reverse engineer invoke the fair use doctrine to avoid being found infringing on a program's copyright, when the copying is only intermediate and is done in the process of creating new, original source code? Judge Rader, of the US Court of Appeal for the Federal Circuit, answered positively. In an opinion that is significantly shorter than Judge Reinhardt's in the Sega case, but equally sweeping, he wrote, "When the nature of a work requires intermediate copying to understand the ideas and processes in a copyrighted work, that nature supports a fair use for intermediate copying. Thus, reverse engineering object code to discern the unprotectable ideas in a computer program is a fair use."[17]

Notice that the caveats in Rader's opinion are the same as in Reinhardt's. First, intermediate copying has to be the only means available—if there are other ways to reverse engineer, then the fair use defense doesn't apply, and copyright infringement may occur. Second, the fair use defense applies only if the nature of the work is to understand ideas and processes (which are themselves functional, and therefore not protected by copyright)—that is, if reverse engineering is undertaken to create new, original code that performs the same (non-copyrightable) function as the original code, but not if it is undertaken to copy the original code or expressive ideas (for example by creating a game clone). Notice also the different venues, and the timing of the respective cases. *Sega v. Accolade* was litigated and appealed in the Ninth Circuit, the geography of which covers Silicon Valley. *Atari Games v. Nintendo* was appealed in the Federal Circuit, which is a special court that has nationwide appellate jurisdiction over patent infringement claims. That is because *Atari Games v. Nintendo* was a tentacular case with many aspects other than copyright, including patents (Nintendo's lock-out chip, the 10NES, was patented, not Sega's TMSS). We return to this aspect of the case in chapter 10.

Let's stick with copyright for now. Judge Caulfield, in San Francisco, had fired the first shot, in *Sega v. Accolade*, by declining the protection of fair use to Accolade in the spring of 1992. In the fall of 1992, Judge Rader of the Federal Circuit, in appeal from a first ruling in favor of Nintendo against

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Atari-Tengen, declared *as a matter of law* that fair use protected the reverse engineer (with the caveats we discussed). Rader noted explicitly that while his court had exclusive jurisdiction over patents, when he came to copyright law, he was applying the law as interpreted by the regional circuits having jurisdiction over the parties, in this case, the Ninth Circuit (if you need a refresher on judicial organization in the United States at this point, feel free to turn back to the brief description in the introduction). And he noted that Caulfield, in the San Francisco District Court, had just ruled "contra" to his interpretation of the law. Three months later, in the appeal from Caulfield's decision, the Ninth Circuit, with Reinhardt, not only rejected Caulfield's decision but made a note that its decision in *Sega v. Accolade* "is consistent [with Rader's Federal Circuit decision in *Atari Games* (*Atari-Tengen) v. Nintendo*] both with our analysis and the result we reach."

This clear agreement settled the case law for the industry. Fair use was indeed a defense to accusations of copyright infringement. Yet, the end results completely diverged. Accolade won. It would be able to produce as many games for the Genesis as it wanted. And the message for the broader industry was clear: it's OK to reverse engineer lock-out chips, as long as it is for the purpose of producing *original* compatible software. But despite Rader's ruling in *law*, in *fact*, Atari-Tengen was declared the loser.

Forks in the Road

After stating that "reverse engineering object code to discern the unprotectable ideas in a computer program is a fair use," Judge Rader concluded, "Atari appears ineligible to invoke the defense." Why? The answer to this question replaces the lawyer as a human being at the center of our broader thesis, which is that histories of technology that focus on "the great inventor" are too reductive; that the law, and lawyers as individuals, often create significant forks in industries' roads. These must be uncovered and explained in order to get a fuller, more textured grasp on history. In this case, Atari-Tengen lost where Sega won, even though Judge Rader declared *as a matter of law* that fair use protected the reverse engineer, because Atari-Tengen's lawyers messed up. Big Time. Again.

Let's turn back to the facts of the case. Beginning in 1986, the courts established,

> Atari attempted to analyze the Nintendo security system "with a view to understanding and replicating it." The initial efforts failed, and Atari Engineer Pat

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> McCarthy concluded, "Unless there is a specific profit motivation, or there is a hacker available with nothing to do, I recommend that the investigation end here." There was a specific profit motivation, and Atari did not discontinue the project. Atari's next effort was to "deprocess" the chips used in the security system. Donald Paauw was assigned the task of analyzing "peeled" chips in an effort to examine the program embedded in it. Paauw was able to read the object code in the chip, but did not succeed in understanding and copying the security program. . . . In December 1987, Atari became a Nintendo licensee, enabling it to sell Nintendo-compatible game cartridges without knowing how to beat the security system. The next month, however, Atari renewed its plan to break the security code, wrongfully obtaining Nintendo's copyrighted program from the Copyright Office. Counsel for Atari filed an application stating that Atari was the defendant in an infringement action in the Northern District of California, and needed a copy of the program to "be used only in connection with the specified litigation." In fact, the declaration used to get the copyrighted program was false. Infringement claims against Atari were not filed [by Nintendo] until November 1989. Atari's purpose in obtaining the program in early 1988 was commercial, rather than legal. Atari admits that it used the copyright office document in order to learn which microprocessor Nintendo used. Comparing the information obtained from the Copyright Office with copies of the binary code read through microscopic examination of "peeled" chips, Atari employees were able to correct and verify their first copies of the Nintendo program. Michael Albaugh, an Atari programmer, carefully documented these efforts.[18]

These efforts paid off, from an engineering standpoint: "After deciphering the 10NES program, Atari developed its own program—the Rabbit program—to unlock the NES. Atari's Rabbit program generates signals indistinguishable from the 10NES program. The Rabbit uses a different microprocessor. . . . Atari also programmed the Rabbit in a different language. Because Atari chose a different microprocessor and programming language, the line-by-line instructions of the 10NES and Rabbit programs vary. Nonetheless, as the district court found, the Rabbit program generates signals functionally indistinguishable from the 10NES program. The Rabbit gave Atari access to NES owners without Nintendo's strict license conditions."[19] So far, Atari-Tengen's Rabbit seems to have clicked all the boxes of Judges Rader and Reinhardt's caveats. It created an entirely original system—microprocessor, coding language and all—that just happened to perform the same (non-copyrightable) function as the 10NES. Yet, as Rader noted, "Atari appears ineligible to invoke the [fair use] defense." Why?

Lawyers' Hands Must Be Clean, Lest Their Client Lose

As it turns out, one who wants to invoke fair use must come to court with "clean hands." Atari's hands were very dirty. The expression "clean hands"

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comes from the old British common law, first coined as a maxim by English barrister Richard Francis in 1728: "He who comes into equity must come with clean hands."[20] Legal historians have traced its genesis all the way to Chinese customary law and to the Roman period of Justinian.[21] The basic principle is that to invoke a legal principle based on fairness, such as *fair* use, one must approach the bar in good faith. One who comes to court in bad faith (with "unclean hands") will be denied a defense such as fair use.

In this case, Rader explained, to invoke the fair use exception, "an individual must possess an authorized copy of a literary work." That was the case of Accolade: they purchased a Sega Genesis console and some Sega game cartridges and worked from there to reverse engineer Sega's TMSS lock-out chip. Atari-Tengen attempted to do the same thing. Had Atari-Tengen succeeded in its engineering efforts, they could have invoked fair use: "Reverse engineering, untainted by the purloined copy of the 10NES program and necessary to understand 10NES, is a fair use." But the process failed due to human transcription errors of the object code and the inability of the engineers to make sense of the resulting assembly language code. So, the court established, Atari's lawyers blatantly "lied to the Copyright Office in order to obtain the copyrighted 10NES program." They claimed that they needed a copy of the code to defend a lawsuit initiated by Nintendo, when no litigation between the parties had in fact started at the time, and the Copyright Office, fooled, obliged. Unfortunately for Atari-Tengen, "knowing exploitation of [a] purloined manuscript [is] not compatible with 'good faith' and 'fair dealings' underpinnings of fair use doctrine." As a result, Atari-Tengen was denied the defense of fair use of the 10NES code it had copied.

In this case, "the lawyer as a human" was *the* key factor in understanding inflection points in technology history. Engineers operate within an ecosystem that is much broader than their labs. Their ingenuity notwithstanding, they are not the only ones with eureka moments. Legal ingenuity, as demonstrated by Judges Reinhardt's and Rader's courts, can at time have far greater impact on industries.[22] Had the judges fallen into Sega and Nintendo's traps, the fate of the software industry could have been much different. And sometimes, it is lawyers' blunders, such as lying to a government agency, that catalyzes the failure of innovative firms. Atari-Tengen would have won its copyright case but for the human error of its counsels. Ed Logg, the engineer behind Atari-Tengen's *Tetris*, claims that his cartridge was a significantly higher quality than the official release bearing the Nintendo Seal of Quality.[23] Few will ever know for themselves. Perhaps, some of the unlicensed

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Nintendo
TETRIS
PAC-MAN
SUPER SPRINT
RBI BASEBALL
WHEN
YOU THINK OF
GREAT HITS...THINK
TENGEN
Now manufacturing and shipping the best arcade hits for play on the
Nintendo Entertainment System®.
Get Tengen games at your favorite store today!
AVAILABLE NOW!
AVAILABLE NOW!
IT'S HERE!
COMING THIS SUMMER!
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Tengen's products are designed and manufactured in U.S.A. by Tengen. They are not designed, manufactured, sponsored, or endorsed by Nintendo.®
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GAUNTLET: ® and ©1985, Atari Games Corp. R.B.I. BASEBALL: TM and ©1987, Atari Games Corp; ©1986, 1987, Namco. PAC-MAN: ® and ©1980, 1984 Namco, Ltd. TETRIS: TM and ©1987, AcademySoft Elorg. All Rights Reserved. Tetris licensed to Andromeda Software Ltd.; and sublicensed to MIRRORSOFT LTD and Sphere, Inc. ©1988 Tengen Inc. All Rights Reserved. Original concept, design and program by Alexey Pazhitnov and Vadim Gerasimov, respectively. SUPER SPRINT: ® and ©1986, Atari Games Corporation. Nintendo and Nintendo Entertainment System are trademarks of Nintendo of America, Inc.

Figure 6.2
Atari-Tengen advertises its NES games.

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Figure 6.3
The "Nintendo Seal of Quality" (center) was present on the official NES *Tetris* packaging (left), but not on Atari-Tengen's (right).

Atari-Tengen cartridges would have become legendary in the heart of NES players for all the right reasons. Several were ported to other game systems. But the offending NES cartridges were recalled for copyright infringement, all because of filthy hands.

A Note on Complexity

The *Sega v. Accolade* and *Atari Games (Atari-Tengen) v. Nintendo* cases are excellent examples of the complexity of the legal game in the field of technology. The puzzles are significantly more complicated than meets the eye and than has been previously reported. For example, most web commentators and simplified histories suggest that the import of these two cases is that software reverse engineering by means of copying object code is OK *per se*. In reality, what these cases say is, if you get sued for copyright infringement in the process of hacking a lock-out chip, *assuming* you're only copying certain things, *and* there's no other option, *and* you're creating new code, *then* you can use fair use as a defense, *but* you can do so only if you have clean hands.[24]

Besides the consequences of the two cases on the individual fates of the respective companies, they are landmark cases that had long-lasting effects on the industry at large, in that they supported the development of software-based hardware emulators.

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The Legacy: *Sony v. Connectix*—Legalizing Emulation

The two cases would come to protect a burgeoning console emulation industry, making it possible for consumers to play games designed for a particular hardware platform on another platform turned into a virtual machine through a piece of software called an emulator. The practice, in the 1990s, was not a new technical feat: as early as 1963, Honeywell, and then RCA, developed "emulators for the IBM 1401, namely programs that enabled other manufacturers' systems to run instruction sets written for the IBM system."[25] What was new was the application of this technique to the videogame industry, and the legal-engineering technique of combating the practice through copyright law in order to monopolize the console market.

In *Sony v. Connectix* (2000), Sony, manufacturer of the PlayStation, sued Connectix, a third party that had developed a software program called the Virtual Game Station (VGS), a virtual machine that emulated "on a regular computer the functioning of the Sony PlayStation console, so that computer owners who buy the Virtual Game Station software can play Sony PlayStation games on their computers."[26] The VGS was designed specifically to run on the Apple Macintosh, and was presented by Steve Jobs himself at the MacWorld Expo on January 5, 1999, in San Francisco, earning accolades (pun intended), including "Biggest Buzz Generator," from the professional press:

> Games figured heavily in Steve Jobs' keynote address and [Connectix] had a large area to themselves on the Expo floor, so the announcement caused a palpable stir. The word was to buy a copy on the spot if you wanted it, in part because Connectix didn't have retail units together yet, but also because of persistent rumors Sony was contemplating legal action to stop distribution of the product. I wouldn't worry much about a lawsuit—if any company does their legal homework regarding emulators, it's Connectix. Nonetheless, Virtual Game Station sold out at the Expo, even though Connectix tried to have more copies on hand than they thought they could possibly sell during show hours.[27]

Sony, of course, sued. If a cheap piece of software for PC became a perfect substitute for their expensive piece of hardware, their console division could go under. The market arrangement and result for consumers in the *Sony* case was different than in *Sega*. In *Sega*, a third-party reverse engineered a console to produce new games for the console. In Sony, the third-party reverse engineered a console to produce an emulator for that console that would play existing games for that console, on a different hardware platform. The legal

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issue, however, was the same in both cases. Just like Accolade did with Sega, Connectix had reverse-engineered the hardware and software of the console, specifically, the basic input-output system (BIOS), a (copyrighted) piece of software hardcoded into the console (and hence called "firmware"), that tells the hardware what to do when reading a PlayStation game. Connectix, just like Accolade had done, made intermediate copies of Sony's BIOS, and used the knowledge gained from this reverse-engineering process to create its VGS, a product that contained only original code and none of Sony's copyrighted code. So just like in *Sega*, the question before the Court of Appeals for the Ninth Circuit, the same that had adjudicated *Sega*, was whether Connectix could use a fair use defense to Sony's claim of copyright infringement.

The court answered positively, an approach "consistent with the 'ultimate aim of the Copyright Act to stimulate artistic creativity for the general public good,'" and referred to *Sega v. Accolade* explicitly as the relevant precedent. "We find," Judge William Canby stated,

> that Connectix's Virtual Game Station is modestly transformative. The product creates a new platform, the personal computer, on which consumers can play games designed for the Sony PlayStation. This innovation affords opportunities for game play in new environments, specifically anywhere a Sony PlayStation console and television are not available, but a computer with a CD-ROM drive is. More important, the Virtual Game Station itself is a wholly new product, notwithstanding the similarity of uses and functions between the Sony PlayStation and the Virtual Game Station. . . . The Virtual Game Station is a legitimate competitor in the market for platforms on which Sony and Sony-licensed games can be played. For this reason, some economic loss by Sony as a result of this competition does not compel a finding of no fair use. Sony understandably seeks control over the market for devices that play games Sony produces or licenses. The copyright law, however, does not confer such a monopoly.[28]

Just like in *Sega*, the *Sony* judge refused to allow the weaponization of copyright law by a party seeking to preclude competitive innovation in a way that only patent law would allow. The technology/law dance was the same in both cases, and the practical result was of great magnitude. Nowadays, most home consoles, except perhaps the most recent, have virtual machine equivalents. The benefit for the consumer is great. This is particularly evident in the burgeoning field of retro-gaming, wherein players of all ages can play old favorites on current personal computers or miniature consoles, where original hardware is not readily available anymore. Another benefit is the ability to bypass regional technical locks (such as different video output standards)

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that have historically made it impossible for a user in, say, the United States to play a game designed for the Japanese or European market (issues of geographical versioning are discussed at length in chapter 9).

The Game Never Ends

Warner-Atari had not been able to control the burgeoning third-party software industry through technical means, so it threw any legal argument their lawyers could think of in the hope one would stick through litigation (*Atari v. Activision*). When that failed, platform owners who rose from the ashes of Atari invented new technical mechanisms to monopolize the market. When other engineers inevitably broke these locks, lawyers invented new legal arguments, based on old principles applied to new technologies. And when that failed again (*Atari-Tengen v. Nintendo*, *Sega v. Accolade*, *Sony v. Connectix*), companies wanting to control markets through locks turned to the World Trade Organization and Congress. Passed in 1998, the Digital Millenium Copyright Act (DMCA) makes it a crime to "circumvent a technological measure that effectively controls access to a work protected" by copyright.[29] While the DMCA is usually associated with the music industry, the act has been used aggressively by the videogame industry, in particular in the context of "mods": "for decades, consoles have been modified ('modded') to give users capabilities further than the creator intended. Some modifications are non-infringing, while others are explicitly infringing on the author's intellectual property, and it has not been easy for courts to discern."[30] Discussion of the DMCA is beyond the scope of this book, but suffice to mention a couple of cases to understand its impact. First, Take-Two Interactive, the maker of the Grand Theft Auto (GTA) game series, has successfully taken down many GTA mods and modder organizations through litigation or fear thereof.[31] And, second, in 2014, the US Court of Appeals for the Sixth Circuit affirmed the criminal conviction of a modder, Jeffrey Reichert, for trafficking a modified Nintendo Wii to a federal agent acting as a prospective customer, after installing a mod chip that allowed the Wii to play unauthorized videogames and selling it to the agent for a $50 profit.[32] The game never ends.

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7 The Lawyer's Corner: To Sue, or Not to Sue, That Is the Question—Intellectual Property Enforcement Strategies in the First Two Decades of the Videogame Industry

After these long, complex, and heavily cited chapters, a short, lightly cited chapter is in order, to put interwoven business and legal strategies in the intellectual property (IP) field in perspective and tie chapters 2, 4, and 6 together. After one secures IP over their hardware, software, game play, and so on, should one be prepared to litigate when these IP rights are infringed upon? At the heart of this question is a basic trade-off. You have only so much energy, time, and money. Where do you want to spend it? We have observed two cookie-cutter opposites. At one end of the spectrum is a deliberate decision by Atari cofounders not to litigate. At the other end is Magnavox's strategy to spend vast resources to sue aggressively, again and again. What is the "best" strategy? There is no right answer. It depends on what one is trying to achieve. A variety of mixed strategies also falls in between these two extremes. Finally, within the same company or industry, things are constantly in flux.

Before one can litigate to defend IP rights, these rights must be secured. *Copyrights* are automatically secured by virtue of the fixation of the expression of an idea in a tangible medium. No registration is needed. *Trademarks* are easy and relatively cheap (in the hundreds of dollars) to formally register (although registration is not technically needed to secure some protection). *Patents*, on the other hand, are extremely expensive and time-consuming to secure. And even more costly and time-consuming to litigate. If it costs $100,000 to secure a patent, and $1.5 million to assert it in court against an infringer, should one even bother to register patents in the first place? Although Bushnell did register his *'483* patent, Atari generally "didn't feel they were worth pursuing. We didn't have time to write patents."[1] Time is one consideration. Money is another one. As Al Alcorn aptly summarized,

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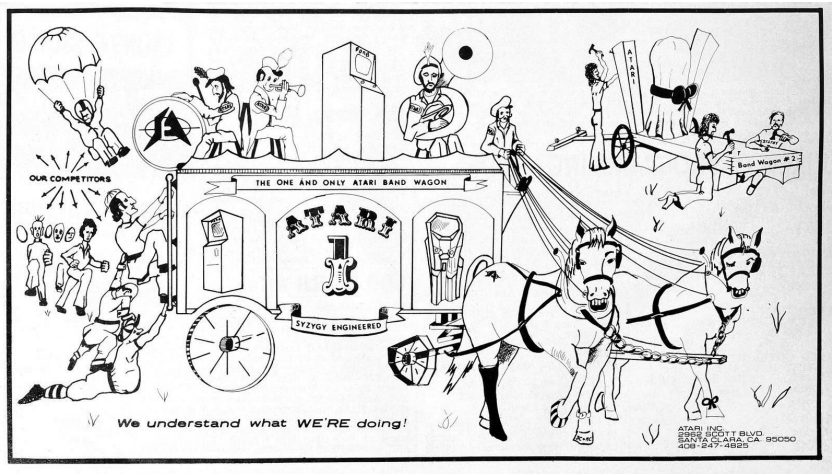

Figure 7.1
Atari Band Wagon ad, *Cash Box* magazine, May 19, 1973.

"Why buy the million dollar gun when you can't afford the 10-million dollar bullet?"[2] By gun, he refers to the patent, and by bullet, to the litigation lawyers. And, even if one secures a patent, it is worth suing infringers? How about violations of copyrights when it comes to knockoffs of games' visual appearance? The answer is industry-dependent.

In the early days of coin-op videogames, the shelf life of games was very short, six months at the most.[3] When it takes a year to sue (and *maybe* secure a victory) against an infringer, there is little point in litigating. Atari illustrated this in a hilarious manner in an ad it ran in *Cash Box* magazine in May of 1973, called the Atari Band Wagon.

In it, two horses are pulling a carriage that bears an "ATARI 1" logo, the title "The One and Only Atari Band Wagon," the subtitle "Syzygy Engineered" (Syzygy was Atari's original brand name), and carries a *Pong* cabinet and a band (perhaps representing the game designers?). The literal "band" wagon is chased by a motley crew labeled as "our competitors." While they are busy trying to catch the band wagon, another Atari crew is building a "Band Wagon #2" on which already is throned a cabinet hidden under a sheet, certainly Atari's next innovation. The tagline is, "we understand what WE'RE doing!" This sarcastic take on the state of the industry in 1973 perfectly illustrates Atari's strategy at the time: let's spend all our time, energy, and money, in

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innovating, innovating, innovating. By always staying ahead of the competition in terms of the freshness and quality of games, we will ensure that our new releases will be the ones placed in bars and arcades. By the time our competitors figure out how to produce knockoffs, the games in question will be obsolete anyway. Beat competition through innovation, not litigation.

A second reason one might have not to litigate is that, in the seventies and eighties, counterfeit boards of arcade games abounded. Stopping their inflow from Asia into the United States and Europe was like fighting the war on drugs: posturing might win public opinion, but is ineffective at stopping the circulation of illegal goods. In an industry where making an illegal knockoff is cheap and easy (as was the case with integrated circuit boards), not only is it costly to sue all counterfeiters, but it's also just as easy for counterfeiters to fold their operation the second they get sued and reappear under a different name and corporate structure. For all these reasons, companies like Atari had a strong incentive not to seek costly patent protection and, generally, not to litigate against infringers of their IP rights.

On the other hand, there might be very good reasons to litigate aggressively. Certain industries are *not* heavily based on innovation. The towel business, for example, has a very steady product. If you can lock a patent on a towel, it is worth litigating against infringers. The same holds true in certain parts of the electronic games industry. Take the electronic darts industry for example. Electronic darts machines look like standard dart boards but use soft tips, which nest themselves into tiny little holes in the board. When the board is struck by a dart, it "effects closing of a switch for producing a scoring signal,"[4] and the machine automatically calculates and displays the score. These machines are popular in bars in part because they have the advantage of calculating the score automatically on behalf of inebriated players. After such an apparatus is created, which *does* stem from radical innovation, there is not much innovation left to pursue. Companies—such as Arachnid, which dominates the market with its Bullshooter product—do innovate on occasion (for example, newest machines are outfitted with two-way video systems and hooked to the internet to enable competitions between players sitting at bars across the world), but not that much, and not that often. In such a case, for Arachnid, it is worth suing patent infringers to assert its legal monopoly and keep the industry heavily concentrated. This is why aggressively litigating has been Arachnid's legal strategy since its early days in the late 1970s.[5]

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U.S. Patent Dec. 4, 1990 Sheet 1 of 5 4,974,857

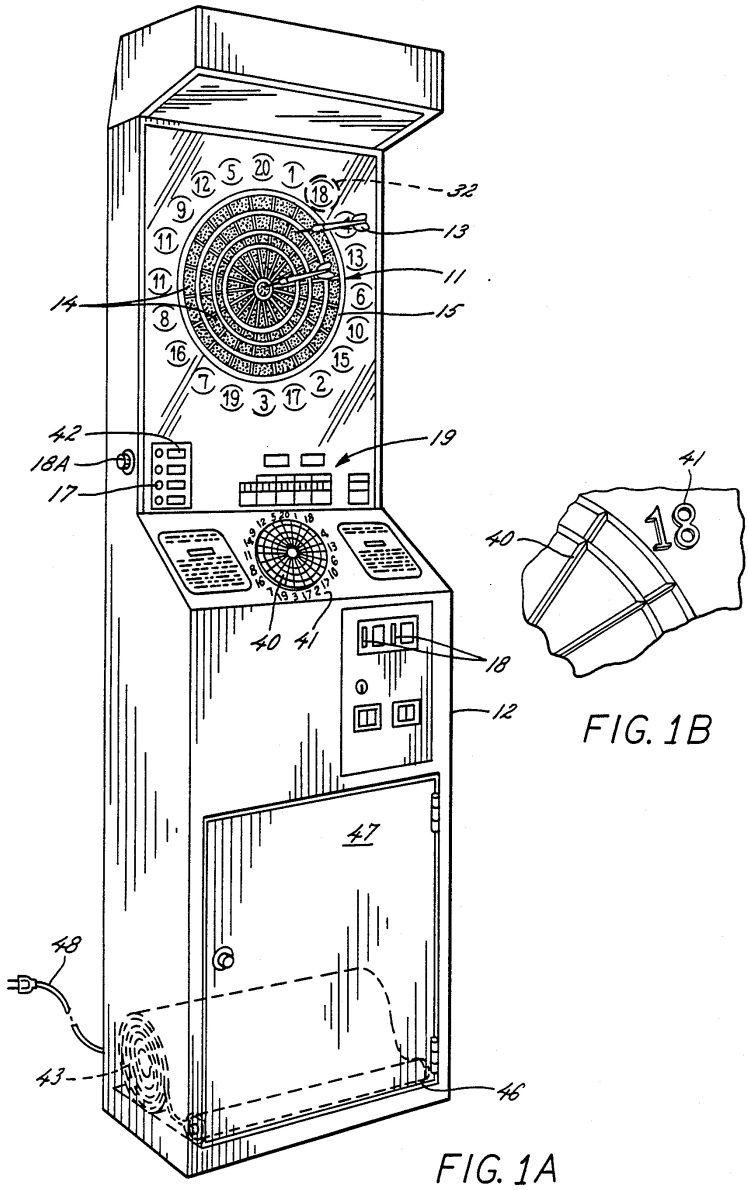

Figure 7.2
A patent held by the leading electronic darts company, Arachnid, for a machine invented by its CEO Paul F. Beall. U.S. Patent No. 4, 974, 857.

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It can also be worth litigating when the IP rights cover not just a game, or a handful of games, but a whole range. We have seen that Magnavox managed to convince the courts that the *'507* patent covered not just the Odyssey but all ball-and-paddle games, no matter the underlying technology used to render them. This gave Magnavox an incentive to litigate, because they could reach new, innovative games created by others and enabled by advances in technology, such as Mattel's or Activision's, which had never been anticipated by the original inventor. In the realm of innovation, indeed, one incentive to litigate is to reap benefits off others' innovations. That is what patent trolls do, by amassing large portfolios of patents, not to support value-creation through developing new products, but by suing others. Magnavox was very much a patent troll, although they based their newfound business model on a single patent, the *'507*. By the late 1970s, they were a failing TV company (nobody wanted their cumbersome wooden cabinets, and their management did not have the vision to disrupt themselves by producing the smaller TV sets people wanted). Catalyzed by Ralph Baer's ego and obsession to be recognized in history, they spent their time and money cruising the world in search of innovators to sue. Figure 7.3, for example, reproduces a 1987 letter between lawyers of the Sanders-Magnavox venture, recounting Ralph Baer's travels to the last CES show: "It looks like the TV game business is expanding and, hopefully, our income will increase."

Then, for the person being sued, the question is, should we defend the lawsuit, or should we settle? The answer, again, depends on a number of factors. For large companies like Mattel and Nintendo, there was so much at stake that they chose to aggressively defend the lawsuit brought against them by Magnavox, to try to invalidate the *'507* patent. It also depends on the defense lawyers' degree of confidence that they can win. And, even when a firm is extremely confident they will win (as was the case of the Flehr Hohbach law firm in their representation of Atari against Magnavox), there are plenty of reasons one might want to settle. First, one can never be sure of the outcome of a lawsuit. This is especially true in the field of patents, which is so complex and typically goes over the head of most juries, and the heads of many lawyers and judges. Atari chose to settle because the cost of the settlement ($1.5 million) was going to be roughly the cost of the defense of the suit, but settlement provided them with a guaranteed positive outcome. This type of trade-off is a strong incentive to settle. So is the peace of mind

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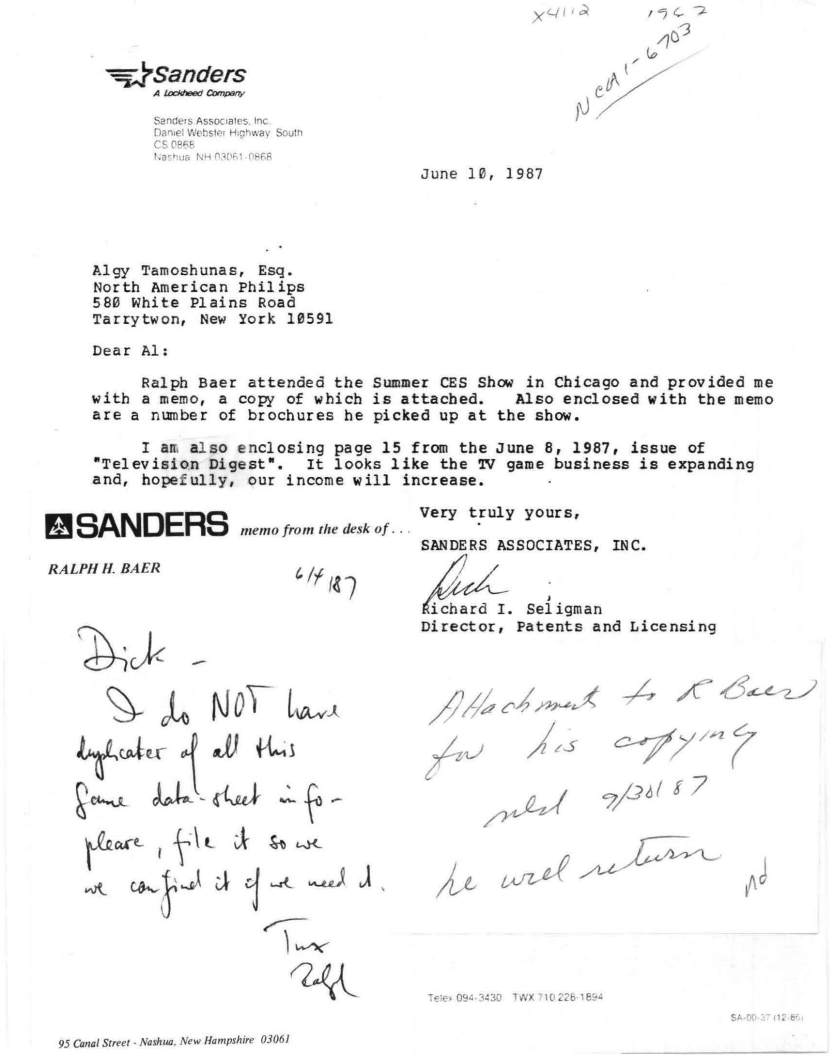

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Nashua, NH 03061-0868

June 10, 1987

Algy Tamoshunas, Esq.
North American Philips
580 White Plains Road
Tarrytwon, New York 10591

Dear Al:

Ralph Baer attended the Summer CES Show in Chicago and provided me with a memo, a copy of which is attached. Also enclosed with the memo are a number of brochures he picked up at the show.

I am also enclosing page 15 from the June 8, 1987, issue of "Television Digest". It looks like the TV game business is expanding and, hopefully, our income will increase.

Very truly yours,

SANDERS ASSOCIATES, INC.

Richard I. Seligman
Director, Patents and Licensing

SANDERS memo from the desk of . . .

RALPH H. BAER

6/4/87

Dick -

I do NOT have duplicates of all this some data-sheet info - please, file it so we we can find it if we need it.

Thx
Ralph

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SA-00-37 (12-86)

Figure 7.3
Letter from Richard I. Seligman (Sander) to Algy Tamoshunas (North American Philips–Magnavox), June 10, 1987. Ralph Baer Litigation Files, University of New Hampshire–Franklin Pierce School of Law's IPMall.

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afforded by a settlement. When a company, as was the case of Atari, is in the process of being sold—to a venture capitalist, a private equity firm, or through an IPO—the uncertainty brought by pending litigation is a terrible hindrance that either drives investors away completely or, at least, drastically reduces the acquisition price as a provision for a possible negative outcome of the litigation. It is therefore worth putting litigation to rest through a settlement. Of course, the perverse effect of settling, for the industry, is to give patent trolls even more of an incentive to sue, often frivolously, because they know that at least some of their targets will be risk-averse and settle, instead of defending the claim.

There are also a myriad of tangential motivations to sue, from personal vendetta, as in the case of Nintendo going after Atari-Tengen in a variety of ways,[6] to public relations. When Atari went after Mystique over *Custer's Revenge*, the console manufacturer knew it had no chance of winning, but this effort showed public opinion that Atari did not approve of the pornographic and racist content that was being produced for the VCS by the third-party developer.

Things are rarely all black or white, and most companies use pragmatic mixed approaches. For example, Atari did not sue National Semiconductor over the *'483* patent, because they knew they were going to lose, and they didn't have the financial might of National to support a litigation effort anyway. However, when they settled with Magnavox, they made sure to cross-license that *'483* patent, to flex muscle to the world and be able to say, "see, Magnavox was forced into recognizing the validity of our patent, so you better not infringe it, or else!" Atari also included in the settlement a provision that ensured that Magnavox would itself sue any competitor of Atari that infringed on the *'507* patent. In other words, Atari didn't believe in suing, unless Magnavox would do at its own expense on Atari's behalf!

Sometimes, the willingness to enforce one's IP is also driven by considerations that stem from other legal fields. For example, Nintendo ended up settling with Atari-Tengen in the 10NES case even after securing a decisive and crushing ruling on copyright grounds, because a final court victory would have severely weakened their position vis-à-vis antitrust regulators (Atari-Tengen was suing Nintendo on antitrust grounds based on the combination of the lock-out chip and Nintendo's restrictive licensing practices; Nintendo was under investigation from the Justice Department and under a lot of heat from politicians and public opinion for inflating the price of games as a result

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of this alleged market monopolization).[7] In the field of IP, strategies are as complex as the legal principles behind them.[8]

Let us also note that litigation strategies are always in flux. The same company can switch strategies overnight with a change of environment or a change in leadership. For example, the pre-Warner Atari executives were all about innovation and not suing. Warner-Atari, on the other hand, activated its litigation machine to preserve the golden goose (the VCS) while it was busy *not* innovating. In this context, let's not forget the role of law firms and their positioning within the industry ecosystem. We have observed Silicon Valley law firms, in the seventies and eighties, as enablers of innovation, as supporters of start-ups, as "dealmakers," "counselors," "matchmakers," "proselytizers" of the valley's spirit, and gatekeepers against litigious entities that "challenge Silicon Valley's structural or behavioral taken-for-granted or that otherwise threaten community cohesion."[9] Many things have changed since this golden age. With nonnative law firms entering the valley and bringing their culture with them, with the rise of mega-law firms that consider clients as assets rather than as business partners, with the rise of young lawyers' salaries—and its corollary, the rise in expected billable hours—combined with the rise of patent trolls, the valley has become much more litigious.[10]

Finally, as the videogame industry center has shifted from California to a multitude of centers around the world, pluralities of strategies have developed to match the plurality of environments one company faces. Strategies become more complex as multijurisdictional interdependence increases (we address this theme in chapter 9). For now, let us turn to a completely different area. In chapter 8, we explore the tension between the freedom of speech of videogame creators and the perceived need for content regulation, especially in the realm of violent videogames.

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8 Regulating Violent Videogames? A Story of Thresholds

Are videogames a mere technology, a form of mindless entertainment that simply replicates physical activities such as tennis, or a form of art, or of speech (perhaps, at times, political), or are they a different animal? The answer to this existential question has very practical implications because it determines the form and degree of protection afforded against zealous regulators eager to police morals. In the United States, it took forty years, between the introduction of the first coin-op videogame, *Galaxy Game*, in 1971 and the landmark case of *Brown, Governor of California v. Entertainment Merchants Association*,[1] in 2011, to settle the question and determine that videogames are a form of speech that qualifies for full First Amendment protection.

What was the process through which videogames went from being mostly unprotected amusement machines to benefiting from a legal regime unheard of in most other parts of the world that protects even violent, racist, anti-Semitic, and sexist games? We start with the moral panics attached to the introduction of coin-op amusement machines and the many attempts at regulating the new medium by municipalities and states, before dissecting the evolution of the relevant case law. Through this exploration, we'll see that the *legal* dimensions of videogame history are radically different from its *political* and *social* aspects.

The Great Scare: From Pinballs to *Mortal Kombat* to Regulating the "Cultural Menu of Indianapolis' Youth"

On December 9, 1993, US Senator Joseph Lieberman, addressing a Senate hearing, demanded that certain violent videogames such as *Mortal Kombat* be "taken off the market now." The senator prefaced his speech with a

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Figure 8.1
Screenshot of *Mortal Kombat*'s "Sub-Zero Spine Rip."

reminder that "every day, the news brings more images of random violence, torture, and sexual aggression right into our living rooms. Just this week, we heard the dreadful story of a young girl abducted from a slumber party in her own home and then found dead. A man on a commuter train begins coldly and methodically to fire away at innocents on their way home, killing five people and injuring many others. Violent images permeate more and more aspects of our lives, and I think it's time to draw the line with violence in videogames." The culprit of society's alleged outburst of violence, of course, was not guns, socioeconomic disparities, a failing education system, or the realistic depiction of violence in television or film. It was the not-so-realistic depiction of violence in one single medium: videogames.

The centerpiece of Liberman's speech was a 1992 two-person martial-arts fighter game by Midway, *Mortal Kombat*, in which the winner of a fight can finish their opponent by ripping off their head and brandishing it as a trophy, complete with a dangling spinal cord. The image is cartoonish and utterly unrealistic. Anyone who has played the game can attest that no player was harmed playing it. See for yourself (figure 8.1).

Senator Herbert Kohl had opened the hearing with undertones of religion and peace: "Today is the first day of Hanukkah, and we have already begun the Christmas season. It is a time when we think about peace on earth and

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goodwill toward all people, and about giving gifts to our friends and loved ones, but it is also a time when we need to take a close, hard look at just what it is we are actually buying for our kids. That is why we are holding this hearing on violent videogames at this time." Joe Lieberman rebounded:

> The new generation of videogames contains the most horrible depictions of graphic violence and sex, including particularly violence against women. Like the Grinch who stole Christmas, these violent videogames threaten to rob this holiday season of its spirit of goodwill. Instead of enriching a child's mind, these games teach a child to enjoy torture. For those who have not seen these so-called "games" before, I want to show you what we're talking about.
>
> First we have Mortal Kombat, which is a martial-arts contest involving digitized characters. When a player wins in the Sega version of the game, the so-called "death" sequence begins. The game narrator instructs the player to "finish"—I quote, "finish"—his opponent. The player may then choose a method of murder, ranging from ripping the heart out to pulling off the head of the opponent with spinal cord attached. A version made by Nintendo leaves out the blood and decapitation, but it is still a violent game.[2]

Senator Lieberman, of course, was not the first politician to scapegoat electric, electronic, or videogames as the cause of all evils in society. In 1942, after a sixteen-year-old schoolboy testified that he had stayed "away from school to play pinball machines with lunch money," New York City mayor Fiorello La Guardia ordered pinball machines seized and destroyed (they would remain illegal in New York City until 1976).[3] La Guardia likened this to "the slot machine racket, [which], as was the case with its evil parent, is dominated by interests heavily tainted with criminality."[4] La Guardia had a point. Coin-operated machines, especially those that do not deliver a good that has to be accounted for (like a pack of cigarettes or a soda), are a convenient means of laundering money: "Al Capone famously used a chain of Chicago coin-operated laundromats to figuratively launder the profits of his illegal prostitution, gambling, and racketeering business."[5] These machines can also be used for gambling. Bally, one of the world's leading pinball manufacturers, founded in Chicago in 1932, allegedly had ties to the Chicago mafia.[6] The *Chicago Sun* "estimated in 1946 that the Chicago Syndicate accounted for about 75 percent of the city's coin music business and that some five thousand pinball machines were being operated illegally in the city."[7] Ties between coin-op (including its entertainment arm, pinball) and the mob were not fiction, but fact. Many other countries faced the same issue, leading to similar pressures on industry.[8]

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Figure 8.2
New York City police commissioner William P. O'Brien destroys a seized pinball machine, March 20, 1949. *Brooklyn Daily Eagle*.

The *videogame* coin-op industry was different. A product of Silicon Valley's geeky-entrepreneurial ecosystem, it had no ties to the mob. Just like pinball machines, however, it did allegedly steal lunch money and corrupt the youth, particularly since many machines were placed in arcades—establishments that had had a bad reputation since at least the 1890s and the first penny arcades. These establishments, in addition to phonograph machines, provided "peephole machines featuring films of flexing strongmen, highland dancers, cockfights, trapeze artists, contortionists, and trained bears."[9] If that was not deviant enough, they "even provided a place to buy, sell, and trade on the underground market for homemade pornographic audio cylinders."[10]

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The video arcades, just like the nickelodeons and the pinball parlors before them, were "a place where sheltered suburban teens might actually come into contact with working-class kids, high-school dropouts, down-and-out adults, cigarettes, and other corrupting influences, which made the place a breeding ground for parental paranoia, if not for crime. Although [the] machines themselves were hard to blame, in the public mind their milieu posed a threat to America's moral fiber."[11] That perceived threat, in addition to the issue of money laundering, became the basis for regulating arcades. For example, during 1973 and 1977, the city of Mesquite, Texas, barred access of under-seventeen minors to coin-operated amusement centers, in part because of "the need to protect such patrons from the influences of those who would promote gambling, sale of narcotics and other unlawful activities.'"[12]

Then, *Death Race* came around. In 1976, developer Exidy released a game that, it promised, "is what the player wants it to be: mobsters in the 30s, commandos in the 40s, gangsters in the 50s, hells angels in the 60s, street racers in the 70s."[13] The game is based on the 1975 movie *Death Race 2000*, a "dystopic social satire" featuring a "cross-country road race in which motorists run down pedestrians for points. Elderly victims are worth a whopping 70 points, while women are worth 10 more points than men in all age brackets, teenagers are worth 40 points, and so on."[14] The videogame itself only featured stick figures, since 1976 technology was still very primitive, but it caused an outrage nonetheless.

The National Safety Council enlisted a behavioral psychologist who, after noting that "nearly nine thousand pedestrians were killed in the past year, presumably in driving accidents," warned, "I'm sure most people playing this game do not jump in their car and drive at pedestrians. . . . But one in a thousand? One in a million? And I shudder to think what will come next if this is encouraged. It'll be pretty gory."[15] J. C. Herz perhaps most eloquently described the root cause of the relationship between video arcades and irrational fear of actual violence:

> This official fear and loathing came in the absence of any conclusive research on the psychological impact of videogames. There was none. There still isn't. There were, however, a bunch of suburban kids loitering after school, ditching classes occasionally, and pouring loose change into newfangled machines for a form of entertainment their parents didn't understand. It wasn't jukeboxes in 1953. It was arcade machines in 1983. But it was still adults freaking out about their precious darlings being driven to new heights of deviancy by popular media.

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Figure 8.3
Exidy's *Death Race* flier. It's fun chasing monsters.

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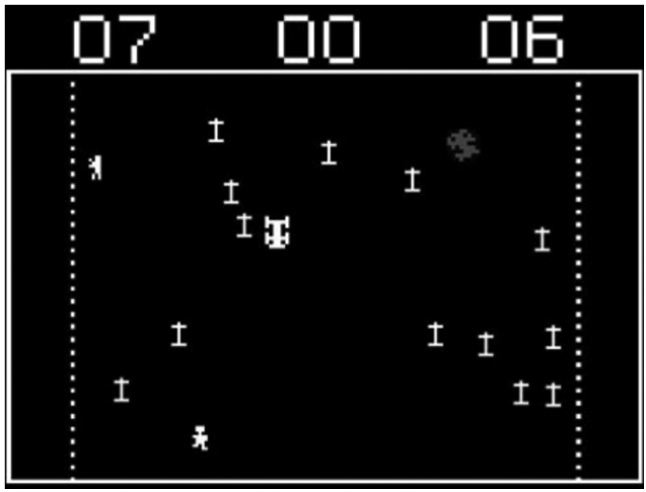

Figure 8.4
Screenshot of *Death Race*'s gameplay. The player's car is in the middle. Pedestrians are seen fleeing. The boxplot-like symbols are the dead pedestrians already run over.

> After all, videogames elicited primal, heart-pounding endocrine reactions, clearly anomalous in junior high school boys. . . . Suddenly, little Johnny wasn't a well-behaved grade-schooler anymore. His bloodstream was awash in adrenaline and testosterone, and he wanted to smash things. Obviously, videogames were making him violent.[16]

The list goes on. On November 22, 1997, four years after Senator Lieberman's stunt, thirteen-year-old Noah Wilson died when his friend Yancy stabbed him in the chest with a kitchen knife. Noah's mother filed suit against Midway Games, alleging that Yancy was addicted to Midway's *Mortal Kombat*, and that Yancy was so obsessed with the game that he actually believed he was the character Cyrax.[17]

Then, on April 20, 1999, two students shot and killed thirteen people and injured another two dozen at Columbine High School in Colorado, then the deadliest US school shooting. One of the murderers was a notorious fan of the first-person-shooter videogame *Doom*. It did not take long for politicians to react. One of them was Bart Peterson, an Indianapolis, Indiana, businessman who, on that very day, was driving his car on his way to announcing his candidacy for mayor of Indianapolis when he heard the news. "I went into a 5-minute stream of consciousness discussion about the massacre," Peterson recalls. "What has changed in US society that has allowed that to happen?

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Twenty-five years ago, when I was in high school, disgruntled teens didn't shoot people. It was a transformative moment for me personally. That passionate feeling stayed with me. I wanted to do something about it. . . . Causation is never provable but it seemed quite plausible [that this was caused by videogames]. What else would be different today than when I was in school? Videogames were the obvious one."[18] After commissioning research on the topic, newly elected Mayor Peterson, relying in part on a study that showed the military used first-person-shooter games to desensitize its soldiers, decided that there was "evidence of a strong effect," and passed an executive order, followed by an ordinance voted by his city council, which forbid "any operator of five or more video-game machines in one place to allow a minor unaccompanied by a parent, guardian, or other custodian to use 'an amusement machine that is harmful to minors.'"[19] The ordinance would later be eviscerated by the US Court of Appeals for the Seventh Circuit, on behalf of whom Judge Richard Posner, a celebrated legal scholar who was in particularly high spirits that day, declared the ordinance an unwarranted incursion into the "cultural menu of Indianapolis' youth."[20] Peterson, finding Posner's opinion "offensive," had hopes to have the Supreme Court hear the case, but certiorari was denied[21] (this case, known as *Kendrick*, is discussed further below).

In 2005, news broke that Rockstar North's *Grand Theft Auto: San Andreas* included materials many deemed unsuitable for children. As a result, California state senator Leland Yee introduced California Assembly Bills 1792 and 1793. The legislation, signed into law by Governor Arnold Schwarzenegger, banned the sale of violent videogames to minors and mandated a rating system for all games. The irony was not so much that Governor Schwarzenegger's acting career had been built on ultraviolent movies such as *Conan the Barbarian* and *The Terminator*, but that Senator Yee knew even more about violence. *Actual* violence. He would end up being arrested by the FBI nine years later for buying automatic firearms and shoulder-launched missiles from the Moro Islamic Liberation Front, an Islamist extremist group located in the southern Philippines, and attempting to resell those weapons to an undercover FBI agent.[22] He would go to jail after pleading guilty of money laundering, political corruption, arms trafficking, and bribery.[23] It is Yee's bills that were struck by the US Court of Appeals for the Ninth Circuit and, upon petition by the state of California, made their way to the Supreme Court to form the subject of the landmark case of *Brown, Governor of California v. Entertainment Merchants Association* (2011).[24]

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Morals Meet the Law: Introducing Thresholds

Much has been written about moral panics induced by electric, electronic, and videogames in their historical, political, psychological, and cultural aspects.[25] But what are the legal dimensions of these panics?

The key here is that the regulability of videogames or of arcades is not about whether Mayor La Guardia is shocked by kids losing their lunch money or Senator Lieberman by spinal cords dangling in *Mortal Kombat*. This is a politicians' game. As one character in the famous television show *House of Cards* points out, "public opinion doesn't have a law degree."[26] But in the legal game, the question is whether the US Constitution provides a framework under which these activities can be regulated or, instead, protects them. And, if they are protected, what the *threshold* to regulate them is. This is not a story of little Johnny obnoxiously smashing things. It is, rather, a story of much less exciting, but no less important, technical legal thresholds.

As the Supreme Court noted in *West Virginia State Board of Education v. Barnette* (1943), "the right of a State to regulate, for example, a public utility may well include, so far as the due process test is concerned, power to impose all of the restrictions which a legislature may have a 'rational basis' for adopting. But freedoms of speech and of press, of assembly, and of worship may not be infringed on such slender grounds. They are susceptible of restriction only to prevent grave and immediate danger to interests which the State may lawfully protect."[27]

What then are the grounds on which videogames can be regulated? Do these games look more like a public utility, like a sporting activity, like mere entertainment, or more like "speech"? The answer determines the thresholds against which these regulations are measured by courts to determine whether they are permissible under the US Constitution.

Thou Shalt Have Copyright Protection, but Not First Amendment Protection

Not until 2011 did the Supreme Court make the definitive statement that videogames, as a matter of principle, "qualify for First Amendment protection." This may seem odd, especially because videogames, in their expressive dimension, have always received *copyright* protection, as the courts made clear in the early 1980s (see the discussion of the *Pac-Man v. K.C. Munchkin*

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case in chapter 4). Yet, whether they were art (which would, as such, be protected by the First Amendment) remained controversial.

Social critic and legendary columnist Art Buchwald told the *Washington Post* in 1983 of having "a feeling that if they covered up the coin slots on the machines, people would call it art. Videogames *are* art."[28] Yet, as *Videogaming & Computer Gaming Illustrated* noted, sarcastically,

> undoubtedly, many people would strongly take issue with Buchwald's basic premise: namely, that videogame displays are worthy of display in their own right, as embodiments of the game designers' artistic expression. But if the shifting perception of [French artist Marcel] Duchamp's work is any guide, those who deny that videogame art is really "Art" with a capital A, may someday find themselves outdistanced by critical and popular opinion alike, maybe even before the year 2051.[29]

The magazine' prediction was right: it took only until 2011. Still, why so long? How can a judge, as one in New York did in 1982, write that "I find, therefore, that although videogame programs may be copyrighted, they 'contain so little in the way of particularized form of expression' that videogames cannot be fairly characterized as a form of speech protected by the First Amendment."[30]

Copyright protects "original works of authorship fixed in any tangible medium of expression, now known or later developed, from which they can be perceived, reproduced, or otherwise communicated."[31] If something can be copyrighted, shouldn't it also automatically receive First Amendment protection? Not necessarily. This bizarrerie is caused by the fact that copyright law and First Amendment law are two distinct bodies of law, with their own concepts, definitions, judicial precedent, and, of course, thresholds. So, for roughly thirty years, while the expressive elements of videogames was undoubtedly protected by copyright law, whether they were subject to First Amendment protection remained unsettled.

The threshold for *copyright* protection is for the work to possess "at least some minimal degree of creativity. To be sure, the requisite level of creativity is extremely low; even a slight amount will suffice. The vast majority of works make the grade quite easily, as they possess some creative spark, 'no matter how crude, humble or obvious' it might be."[32] The threshold for *First Amendment* protection is . . . different. In 2002, in *Wilson v. Midway Games*, the District Court for the District of Connecticut had to decide whether *Mortal Kombat* was protected expression under the First Amendment. At stake was whether Noah Wilson's mother could recover damages from Midway

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for having published the game that she alleged caused her son's stabbing. If it was protected expression, then the First Amendment would bar her tort claim. The court started by summing up the state of case law:

> The Second Circuit recently addressed the "elusive" nature of what constitutes First Amendment expression. . . .
>
> While there are no U.S. Supreme Court or Second Circuit decisions directly on point, several courts in other jurisdictions have addressed the scope of First Amendment protection enjoyed by videogame manufacturers in a variety of contexts. . . .
>
> The *Kendrick I* court noted that there is no "precise test for determining how the First Amendment protects a given form of expression." . . .
>
> Wilson argues that Mortal Kombat is not protected expression, relying principally on *America's Best Family Showplace v. City of New York*, in which the court likened videogames to mechanical entertainment devices, such as pinball machines, and recreational pastimes, such as chess and baseball, consisting of rules and implements: "In no sense can it be said that videogames are meant to inform."
>
> In sum, the cases are reconcilable on this point: While videogames that are merely digitized pinball machines are not protected speech, those that are analytically indistinguishable from other protected media, such as motion pictures or books, which convey information or evoke emotions by imagery, are protected under the First Amendment. As recently suggested by the Second Circuit in *Corley*, the inquiry must be context-specific.
>
> In short, the label "videogame" is not talismanic, automatically making the object to which it is applied either speech or not speech.[33]

Should the inquiry be context-specific? Shouldn't creators, instead, know ahead of time, with a reasonable degree of foreseeability, whether their work will qualify for First Amendment protection? After all, "predictability in law is an essential part of a free society."[34] The Supreme Court agreed with this adage. It was time for it to step in and address the question of whether videogames, *as a matter of principle*, are a form of speech protected by the First Amendment. It did so by granting certiorari in the case of the California law that prohibited "the sale or rental of 'violent videogames' to minors, and require[d] their packaging to be labeled '18.'"[35] That law had been ruled unconstitutional as a violation for the First Amendment by the District Court for the Northern District of California and the Ninth Circuit Court of Appeals.

Brown Case Overview

In *Brown, Governor of California v. Entertainment Merchants Association* (2011),[36] the Supreme Court made a sweeping holding: "Videogames qualify for First

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Amendment protection." And, it continued, California did not meet the threshold for regulating protected speech in ways that would pass constitutional muster, a criterion called "strict scrutiny," meaning that the statute at stake "is justified by a compelling government interest and is narrowly drawn to serve that interest." The State of California failed to meet the strict scrutiny threshold. Why?

The 20-page-long majority argument is a subtle dive into a wide array of technical legal arguments. See, courts are bombarded by arguments. Sometimes, they are legitimate and, sometimes, frivolous, but judges have to acknowledge them all, even if in passing. In the case of *Brown*, the Supreme Court had to address the following questions, driven both by existing case law and by the creativity of California's lawmakers and lawyers:

— are videogames a form of speech?;

— if so, are violent videogames a form of speech that is protected by the First Amendment?;

— if so, could violent videogames nonetheless be regulated just like obscenity is?;

— if not, could violent videogames nonetheless be regulated just for minors?;

— if not, could violent videogames nonetheless be regulated because they actually cause physical violence?

The sequence of these questions drove the Supreme Court's discussion of the matter and, therefore, the structure of the remainder of this chapter. The court's case summary might seem excessively long, but bear with the legalese while you read it, and we will unpack it together. HELD:

> The Act does not comport with the First Amendment.
>
> (a) Videogames qualify for First Amendment protection. Like protected books, plays, and movies, they communicate ideas through familiar literary devices and features distinctive to the medium. And "the basic principles of freedom of speech . . . do not vary" with a new and different communication medium. The most basic principle—that government lacks the power to restrict expression because of its message, ideas, subject matter, or content—is subject to a few limited exceptions for historically unprotected speech, such as obscenity, incitement, and fighting words. But a legislature cannot create new categories of unprotected speech simply by weighing the value of a particular category against its social costs and then punishing it if it fails the test. . . . California's Act does not adjust the boundaries of an existing category of unprotected speech to ensure that a definition designed for adults is

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not uncritically applied to children. Instead, the State wishes to create a wholly new category of content-based regulation that is permissible only for speech directed at children. That is unprecedented and mistaken. This country has no tradition of specially restricting children's access to depictions of violence. And California's claim that "interactive" videogames present special problems, in that the player participates in the violent action on screen and determines its outcome, is unpersuasive.

(b) Because the Act imposes a restriction on the content of protected speech, it is invalid unless California can demonstrate that it passes strict scrutiny, i.e., it is justified by a compelling government interest and is narrowly drawn to serve that interest. California cannot meet that standard. Psychological studies purporting to show a connection between exposure to violent videogames and harmful effects on children do not prove that such exposure causes minors to act aggressively. Any demonstrated effects are both small and indistinguishable from effects produced by other media. Since California has declined to restrict those other media, e.g., Saturday morning cartoons, its video-game regulation is wildly underinclusive, raising serious doubts about whether the State is pursuing the interest it invokes or is instead disfavoring a particular speaker or viewpoint. California also cannot show that the Act's restrictions meet the alleged substantial need of parents who wish to restrict their children's access to violent videos. The video-game industry's voluntary rating system already accomplishes that to a large extent. Moreover, as a means of assisting parents the Act is greatly overinclusive, since not all of the children who are prohibited from purchasing violent videogames have parents who disapprove of their doing so. The Act cannot satisfy strict scrutiny.

Are Videogames a Form of Speech?

The threshold for passing constitutional muster is much higher when the conduct being regulated is "speech" than when it is not. Hence the importance of this first question.

Fear of new technology is as ancient as time, and seems heightened in the case of new media. In the late nineteenth century, for example, the introduction of the telephone was seen as bringing moral evils into the home.[37]

With fear of new technology usually comes new regulation, sometimes needed but often irrational. We have already discussed the prohibition of pinballs by New York mayor La Guardia, and many other cities followed suit, including, notably, Los Angeles, where the machines were non grata from 1939 until 1974. Aside from the real ties of the pinball industry to the mob, however, claims of delinquency attached to arcades were most often overblown. For example, in the *Mesquite* case, regulating minors' access to arcades because of the alleged undue influence on these "patrons of tender years,"

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the District Court for the Northern District of Texas had noted humorously that while "police officers testified that young people congregate at such amusement establishments, that several truancy arrests have been made at such centers . . . and that in one instance a juvenile arrested for truancy at an amusement center was later found to be participating in the free school lunch program," "the above seem incredibly slender reeds upon which to base an ordinance restricting the age at which persons may enter a coin-operated amusement center."[38]

In the mid-1990s, as America discovered the internet, *Time* magazine made its cover about "Cyberporn," infamously touting a new study purporting to show "how pervasive and wild [cyberporn] really is. Can we protect our kids—and free speech?"[39] The "Great Internet Fear" led Congress to regulate the medium through the Communications Decency Act of 1996, which sought to protect minors from harmful material on the internet but was of such reactionary overbreadth and vagueness that it was swiftly invalidated by the Supreme Court in *Reno v. ACLU*.[40] The landmark *Reno* case sent the message that, from the constitutional standpoint, fear alone cannot justify broad regulations of speech. What then, if anything, can?

In the United States, as in most democracies, how the government can regulate depends on the object of regulation. For example, a public good tends to be more easily regulable than private property; an activity that is perceived as dangerous, more than one that is seen as benign; and commercial activity more than political activity. Because of this last distinction, if videogames are "labeled 'speech,'"[41] then they receive a more heightened degree of protection than, say, the manufacturing of dangerous chemicals.

In the early days of video arcades, municipalities that regulated them did so on the basis that, just like pinball machines before them, videogames were *not* considered part of an expression of idea. Municipalities implemented such regulations as part of their *police powers*. Police powers generally refer to the authority of a state or municipality to pass local regulations that promote public health, morals, safety, public convenience, and general prosperity.[42] These powers derive from the Tenth Amendment to the Constitution, which states that "the powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States respectively, or to the people." These powers can be used through a variety of techniques, including flat bans, licensing schemes, and zoning.

Flat bans are straightforward. In 1982, the city of Marshfield, Massachusetts, banned all commercial operation of coin-activated amusement devices.[43] No

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pinballs or videogames in any space open to the public within the city limits, period.

The second technique is *licensing*, wherein the operator of an arcade must receive a license for either the business as a whole or for each individual game. Cities have wide discretion as to how difficult they make it to obtain a license, and often make it very difficult indeed, as is often the case with liquor licenses, or, in the *America's Best* case discussed below, with arcade licenses. The threshold for what a city is permitted to do in the case of activities not "labeled 'speech'" has been articulated by the Supreme Court in ways that give the regulator a lot of leeway. In *Murphy v. California* (1912), the court examined the constitutionality of a South Pasadena regulation that constrained the operation of billiard halls (*not* labeled speech) to hotels having twenty-five or more rooms and denied licenses to any other operator. The court ruled that the US Constitution "does not prevent a municipality from prohibiting any business which is inherently vicious and harmful," and "does not prevent a state from regulating or prohibiting a non-useful occupation which may become harmful to the public, and the regulation or prohibition need not be postponed until the evil is flagrant." On that basis, it decided that "a classification in a statute regulating billiard halls based on hotels having twenty-five rooms is reasonable, and the owner of a billiard hall, not connected with a hotel, is not denied equal protection of the laws by an ordinance prohibiting keeping billiard halls for hire because hotels having twenty-five rooms can maintain a billiard hall for their regular guests."[44]

Finally, municipalities can resort to *zoning*, a system wherein certain types of establishments can be excluded from certain areas such as schools, hospitals, or residential areas, or confined to certain areas. In 1926, the Supreme Court held that "the police power supports also, generally speaking, an ordinance forbidding the erection in designated residential districts, of business houses, retail stores and shops, and other like establishments . . . since such ordinances, apart from special applications, cannot be declared clearly arbitrary and unreasonable, and without substantial relation to the public health, safety, morals, or general welfare."[45] The court clarified in a later case that "the zoning power is not infinite and unchallengeable; it 'must be exercised within constitutional limits.' Accordingly, it is subject to judicial review; and as is most often the case, the standard of review is determined by the nature of the right assertedly threatened or violated."[46]

In the context of activities not labeled "speech," then, the threshold for passing constitutional muster is quite low. Regulations generally have to be

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reasonable, the exercise of the police power is presumed to be constitutionally valid, and the burden of proving otherwise is on those challenging the regulation.[47]

In contrast, in the realm of speech, when the regulation imposes a restriction on the *content* of speech (instead of just the time, place, and manner in which it can be exercised), the standard is much higher.[48] The courts call it "strict scrutiny." Under that standard, unless the government can demonstrate that the restriction "is justified by a compelling government interest and is narrowly drawn to serve that interest," then the regulation will fail to pass constitutional muster.[49] Note that not only is the standard stricter, but the presumption plays against the regulator: the burden of proof is on the government to prove that the threshold is met, and "ambiguous proof will not suffice."[50]

The key question for determining the constitutional threshold, then, is whether videogames are "speech." On its face, that question is debatable. The creator of a videogame does not "speak" per se. But the Supreme Court has long recognized that not all "speech" is spoken and focuses instead on expressive qualities of creations or actions. For example, burning a flag,[51] wearing an armband,[52] wearing a T-shirt bearing the words "Fuck the Draft" inside a courthouse,[53] covering a license plate bearing the words "Live Free or Die" with black tape,[54] all as means of silent political protest, have been afforded protection under the speech clause of the First Amendment. The right to *receive* speech (as in buying a magazine, and, if videogames are indeed speech, playing videogames) is also included in the freedom to speak.[55]

At the same time, however, the Supreme Court has also told us that "we cannot accept the view that an apparently limitless variety of conduct can be labeled 'speech' whenever the person engaging in the conduct intends thereby to express an idea."[56] And for years, what is speech had been interpreted differently by different courts. For example, in 1915, the Supreme Court ruled in *Mutual Film Corp.* that "the exhibition of moving pictures is a business, pure and simple, originated and conducted for profit like other spectacles, and not to be regarded as part of the press of the country or as organs of public opinion *within the meaning of freedom of speech*."[57]

What, then, *is* the meaning of freedom of speech? For something to be "labeled 'speech,'" the *O'Brien* Supreme Court stated in 1968 in the case of the burning of draft cards as a means to protest the Vietnam War, it has to be "sufficiently imbued with elements of communication to fall within the scope of" the First Amendment.[58] This definition is circular and not of great

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help. The court might as well have written that "speech is speech and non-speech is not speech," or, as Justice Stewart once stated when being tasked to define hardcore pornography, "I know it when I see it."[59] The *O'Brien* definition of speech also rests on a subjective interpretation. What does it mean for an activity to be "sufficiently imbued with elements of communication"? The Supreme Court attempted to resolve the question by bringing a more objective two-prong test in *Spence v. Washington* (1974), another Vietnam-War–era case. A college student had displayed out of his apartment window a United States flag upside down with a peace symbol taped thereto and was convicted under Washington's "improper use" statute forbidding the exhibition of a United States flag to which is attached or superimposed figures, symbols, or other extraneous material. He testified at his trial that he thus displayed his flag as a protest against then-recent actions in Cambodia and fatal events at Kent State University, and that his purpose was to associate the American flag with peace instead of war and violence. The Supreme Court ruled that, in order to determine whether his activity was sufficiently imbued with elements of communication to fall within the scope of the First Amendment, it had to apply the following two-prong test: (1) whether or not the party at stake had "an intent to convey a particularized message"; and (2) if "in the surrounding circumstances the likelihood was great that the message would be understood by those who viewed it."[60]

Let's ask: How does this apply to videogames? First, it's worth noting that not all courts who had to rule on the question actually applied the *Spence* test.[61] Many chose to ignore it. For example, the District Court for the Southern District of Indiana stated in 2000 in the context of the aforementioned Indianapolis ordinance that "the Supreme Court has never articulated a precise test for determining how the First Amendment protects a given form of expression."[62] Further, even when relying on *Spence*, different courts provided different interpretations over the years until the *Brown* court settled the question with a definite affirmative answer in 2011. Let us see, in the next few pages, how the judicial perception of videogames went from "not speech" to "speech," and how the ability of states and municipalities to regulate spaces evolved accordingly.

Pinballs and Nude Dancing

Videogames were originally seen as just a new form of pinball. With reason. Both were electronic games, eating nickels, then quarters. Cheap entertainment available in parlors often tainted with a bad reputation, from

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nickelodeons, to bars, to arcades. Courts largely considered that pinballs were not protected speech: "A pinball machine is not protected speech," the Second Circuit wrote as recently as 2002.[63] When time came to judge the validity of regulations of videogames located in arcades, courts compared the apple to the closest orange, the pinball. In 1982, in *America's Best Family Showplace v. City of New York*, the US District Court for the Eastern District of New York had to decide the validity of a New York City ordinance that declared that any establishment that contained more than four videogames was an "arcade," a license for which was made particularly difficult to obtain. The court decided that "in no sense can it be said that videogames are meant to inform. Rather, a videogame, *like a pinball game*, a game of chess, or a game of baseball, is pure entertainment with no informational element. That some of these games 'talk' to the participant, play music, or have written instructions does not provide the missing element of 'information.'"[64] Going back to the standard against which the validity of the city ordinance should then be measured, the court continued: "Since videogames do not implicate First Amendment problems, the validity of the City's regulatory scheme must be measured against the less rigorous standards of due process and equal protection under the Fourteenth Amendment. . . . Municipalities have been accorded broad powers to control land use through zoning laws that are 'rationally related to legitimate state concerns and [do] not deprive the owner of economically viable use of his property.'"[65]

In this case, the court upheld the validity of the ordinance by finding that the "legitimate governmental objectives" in this case was that

> of protecting commercial development against congestion, promoting the most desirable use of land in accord with a well-considered plan, encouraging stability of commercial development, preserving the character of commercial districts and their peculiar suitability for particular uses, and protecting the health, safety, and welfare of the public at large. . . . Amusement arcades have attracted much media and community attention of late. The City has noted their proliferation and their deleterious effect upon the quality of life in the City's neighborhoods to justify regulating their operation. Amusement arcades attract large numbers of people for short periods of time. The City's regulatory provisions minimize the problems of noise and congestion and provide for the stable development of local communities, free from unnecessary noise and congestion.[66]

Also note that the *America' Best* court took care to distinguish videogames from nude dancing, which *is* protected by the First Amendment:

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> The case on which plaintiff principally relies, *Schad v. Borough of Mt. Ephraim*, involved a coin operated mechanism which permitted a customer "to watch a live dancer, usually nude, performing behind a glass panel. Mt. Ephraim's zoning ordinance totally banned all forms of live entertainment within the town. The Supreme Court found that this "entertainment" was protected by the First Amendment and that the town had not "adequately justified its substantial restriction of protected activity." This Court, however, is not persuaded that plaintiff's videogames, unlike the nude dancing in Schad, are a form of speech protected by the First Amendment. While the Supreme Court stated in Schad that "[e]ntertainment, as well as political and ideological speech, is protected . . . ," it seems clear that before entertainment is accorded First Amendment protection there must be some element of information or some idea being communicated.[67]

It is odd that the *America' Best* court would find nude dancing to convey "some element of information or some idea being communicated," but not videogames. After all, artifacts do not need to be "essential vehicles of political speech or fine arts" to be protected under the First Amendment.[68] In fact, other courts, which conferred First Amendment protection to videogames, did so on the basis of the comparison to nude dancing.

The very same year *America's Best* was decided, for example, another New York court found that "considering the fact that other forms of expression no more 'informative' than videogames—viewing nude dancing through a coin operated mechanism—have been recognized as constitutionally protected and the elusive line between informing and entertaining, this court concludes videogames *are* a form of speech protected by the First Amendment."[69] Yet, several other courts in the 1980s found the videogames presented to them to lack the "key element" of "communication."[70]

After viewing *Space Invaders* and listening to the argument that the game "represents the author's expression of a particular idea or fantasy," the Supreme Judicial Court of Massachusetts decided in January of 1983 that plaintiff had "succeeded in establishing only that videogames are more technologically advanced games than pinball or chess. That technological advancement alone, however, does not impart First Amendment status to what is an otherwise unprotected game." The court also noted that "successful play on these videogames depends on the player's eye-hand coordination, reflexes, muscular control, concentration, practice, and on the player's understanding of the rules of play," and, based on that physical element, likened videogames to the "physical activity of roller skating in a public roller skating rink." Such activity, the court continued, "was not protected speech

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because, although some expression might be involved, the patrons of the skating rink 'primarily use the facilities for physical exercise and personal pleasure.'"[71]

Five months later, the same court viewed a demonstration video of *Ms. Pac-Man*, *Tron*, *Donkey Kong*, *Zaxxon*, and *Kangaroo* and, again, concluded that the video and explanation of the games "do not demonstrate any more communicative aspects of these videogames than were demonstrated" in the case of *Space Invaders*, and reasserted that videogames "are, in essence, only technologically advanced pinball machines."[72] Interestingly, one of the games at issue, *Tron*, was the videogame sequel of the (constitutionally protected) movie. In this early form of transmedia storytelling, only a part of the story was constitutionally protected.[73] Note that the aforementioned cases did not completely close the door to the future protection of videogames and limited the scope of their ruling to the games presented to them: "We recognize that in the future videogames which contain sufficient communicative and expressive elements may be created."[74]

By the late 1980s, then, the question of whether videogames are speech, which in turn determines which constitutional standard the validity of a restrictive regulation must be judged against, was still not settled. Videogames themselves had evolved from evoking simple nonprotected physical activities (think *Pong*, emulating tennis or ping-pong) to much more elaborate wholes.

In the 1990s and early 2000s, courts came to recognize that, perhaps, the fact that "many of today's games are highly interactive versions of movies and storybooks, replete with digital art, music, complex plots, and character development" could be dispositive. In the *Kendrick* case, the District Court found that "the visual art and the description of the action-adventure games in the record support [the] contention that *at least some* videogames contain protected expression. It is difficult for First Amendment purposes to find a meaningful distinction between the *Gauntlet* game's ability to communicate a story line and that of a movie, television show, or—perhaps the best analogy—a comic book."[75] Just like the cases in Massachusetts, this decision was highly circumstantial. How about much simpler games such as *Angry Birds*? Would its simplicity lead the court to consider that, just like *Ms. Pac-Man*, it lacked the communicative element needed for First Amendment protection? Or would the anger of the birds make the game more like a protected comic book? It was time for the Supreme Court to step in and address the

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question of whether videogames, *as a matter of principle*, are a form of speech protected by the First Amendment.

The *Brown* court did just that, separating issues of videogames as *entertainment*, and videogames as *technology*, two classifications that prevent videogames from fitting nicely within the familiar political speech realm that receives the greatest of deference in US law.

The *Brown* Court Decides That Videogames *Are* Speech

First,

> The Free Speech Clause exists principally to protect discourse on public matters, but we have long recognized that it is difficult to distinguish politics from entertainment, and dangerous to try. "Everyone is familiar with instances of propaganda through fiction. What is one man's amusement, teaches another's doctrine."

Here, the *Brown* court refers to the *Winters v. New York* case.[76] In that case, a New York City bookdealer had been convicted of a misdemeanor for selling materials "principally made up of criminal news, police reports, or accounts of criminal deeds, or pictures, or stories of deeds of bloodshed, lust or crime." The Supreme Court declared the criminal statute unconstitutional as it violated the First Amendment, and clarified,

> Though we can see nothing of any possible value to society in these magazines, they are as much entitled to the protection of free speech as the best of literature.

Addressing the classification of videogames as a mere technology that might not deserve speech protection, the *Brown* court retorted:

> Like the protected books, plays, and movies that preceded them, videogames communicate ideas—and even social messages—through many familiar literary devices (such as characters, dialogue, plot, and music) and through features distinctive to the medium (such as the player's interaction with the virtual world). That suffices to confer First Amendment protection. Under our Constitution, "esthetic and moral judgments about art and literature . . . are for the individual to make, not for the Government to decree, even with the mandate or approval of a majority."
>
> And whatever the challenges of applying the Constitution to ever-advancing technology, "the basic principles of freedom of speech and the press, like the First Amendment's command, do not vary" when a new and different medium for communication appears.

Here, the *Brown* court explicitly referred to the landmark case of *Joseph Burstyn, Inc. v. Wilson*,[77] which in 1952 unequivocally conferred First

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Amendment protection to motion pictures. In that case, the State of New York had created a licensing scheme for movies, subjecting them to prior restraint, a censorship mechanism the Supreme Court had long rejected for the print medium.[78] The *Burstyn* court rejected the state's argument that technological differences between the media justified a blanket denial of First Amendment principles for the cinematographic medium: "Each method [of expression] tends to present its own peculiar problems. But the basic principles of freedom of speech and the press, like the First Amendment's command, do not vary."

One could argue that it took an awfully long time, four decades, between the first known commercial exploitations of videogames in Silicon Valley in the early 1970s (*Galaxy Game*, at the Stanford University student union in 1971, followed by *Computer Space* and *Pong* in 1972) and the time the Supreme Court unequivocally afforded the medium First Amendment protection. In comparison to the cinematographic medium, where the same process took fifty-seven years between the first commercial showing by the Lumière Brothers in Paris in 1895 and the *Burstyn* case in 1952, videogames are well within the bounds of normality. Judicial Standard Time tends to run much slower than technological and social progress.

Having settled the question of whether videogames qualify as speech under the First Amendment, the court turned to the issue of whether they are *protected* speech. For despite its sweeping affirmation that Congress shall make *no* law abridging the freedom of speech, the First Amendment has been interpreted by the courts as having limited exceptions, including obscenity,[79] incitement,[80] and fighting words.[81] To these classical examples have been added a few over the years, including true threats[82] and misleading advertising.[83] The fact that exceptions have been added over time, although sparsely, opened the door for regulators to argue that videogames, too, are different and, while speech, are undeserving of First Amendment protection. Let us, then, explore the second prong of our test.

Are Violent Videogames *Protected* Speech?

On the US speech farm, all animals are equal, but some are more equal than others. As the *Brown* court reminds us:

> From 1791 to the present, the First Amendment has permitted restrictions upon the content of speech in a few limited areas, and has never included a freedom to disregard these traditional limitations. These limited areas—such as obscenity,

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> incitement, and fighting words—represent well-defined and narrowly limited classes of speech, the prevention and punishment of which have never been thought to raise any Constitutional problem.

However, the *Brown* court continues, just because exceptions have been made in the past doesn't mean that new exceptions can be pulled out of the legislator's hat any time it pleases:

> Last Term, in *Stevens*, we held that new categories of unprotected speech may not be added to the list by a legislature that concludes certain speech is too harmful to be tolerated.

The *Stevens* case dealt with a federal statute that criminalized the *depiction* of animal cruelty. The court held that the actual *commission* of animal cruelty could be prohibited by statute, but not its *depiction*. This distinction between an action and speech about an action is a staple of First Amendment case law. In reaffirming this distinction, the *Stevens* court also reasserted a long-standing principle in US political speech jurisprudence, that speech that causes *psychological* harm cannot be suppressed just because of that harm. To wit: the 1978 *Skokie* case, in which a group of neo-Nazis were allowed to demonstrate in a city populated predominantly by Holocaust survivors, despite the evident trauma that demonstration would inflict on the inhabitants.[84] The case was decided by the Illinois Supreme Court. When appealed to, the US Supreme Court refused to hear the case and denied certiorari, because, as commenters noted, *Skokie* was an "easy case" in light of First Amendment principles.[85] As Carl Cohen, then an American Civil Liberties Union director, noted, "the principle that 'Congress shall make no law' . . . is perennially tested by American Nazis. . . . By presenting the extreme case, these Nazis provide an instructive test of a very good principle."[86] In fact, as Justice Douglas wrote in *Terminiello v. Chicago* (1949), speech "may indeed best serve its high purpose when it induces a condition of unrest, creates dissatisfaction with conditions as they are, or even stirs people to anger."[87]

What about the depiction of *violence*? Is it protected by First Amendment (like the depiction of animal cruelty) or outside of the First Amendment protective umbrella, like obscenity, incitement, or fighting words? The answer to this question, the *Brown* court tells us, depends on "American tradition":

> We held [the *Stevens*] statute to be an impermissible content-based restriction on speech. There was no American tradition of forbidding the depiction of animal cruelty—though States have long had laws against committing it. . . . The Government argued in *Stevens* that lack of a historical warrant did not matter; that it could

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> create new categories of unprotected speech by applying a "simple balancing test" that weighs the value of a particular category of speech against its social costs and then punishes that category of speech if it fails the test. We emphatically rejected that "startling and dangerous" proposition.

Once again, we see that the ability for the regulator to regulate is not tied to psychological harm, disgust, shock, or other real or alleged social costs. It is instead tied to a legal standard. In this case, new categories of speech outside of the protection of the First Amendment can be added to the traditional list (obscenity, incitement, and fighting words) only if there is an *existing tradition* in America to restrict such speech. This is important because, under this line of cases, if there is no tradition of regulating violence in media, then violent videogames, no matter how shocking, and Senator Lieberman's or Mayor Peterson's outrage notwithstanding, are indeed protected speech. This is why the *Brown* court then goes on to compare videogames to more traditional forms of media, starting with books:

> California's argument would fare better if there were a longstanding tradition in this country of specially restricting children's access to depictions of violence, but there is none. Certainly the books we give children to read—or read to them when they are younger—contain no shortage of gore. Grimm's Fairy Tales, for example, are grim indeed. As her just deserts for trying to poison Snow White, the wicked queen is made to dance in red hot slippers "till she fell dead on the floor, a sad example of envy and jealousy." Cinderella's evil stepsisters have their eyes pecked out by doves. And Hansel and Gretel (children!) kill their captor by baking her in an oven.
>
> High-school reading lists are full of similar fare. Homer's Odysseus blinds Polyphemus the Cyclops by grinding out his eye with a heated stake ("Even so did we seize the fiery-pointed brand and whirled it round in his eye, and the blood flowed about the heated bar. And the breath of the flame singed his eyelids and brows all about, as the ball of the eye burnt away, and the roots thereof crackled in the flame"). In the Inferno, Dante and Virgil watch corrupt politicians struggle to stay submerged beneath a lake of boiling pitch, lest they be skewered by devils above the surface. And Golding's Lord of the Flies recounts how a schoolboy called Piggy is savagely murdered by other children while marooned on an island.

To be sure, the court acknowledges that in many cases "the violence is astounding. Victims are dismembered, decapitated, disemboweled, set on fire, and chopped into little pieces. . . . Blood gushes, splatters, and pools." But, it continues, "disgust is not a valid basis for restricting expression." The depiction of violence, then, the *Brown* court asserts, is not outside the scope of protection of the First Amendment, because, in the American tradition, it has not historically been restricted.

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The California regulator, however, had more than one string to its bow. When drafting its regulation, it had used the technique of "pigeonholing" (also known as "shoehorning") the protected speech into a category that actually is *un*protected. And what category is better, in a country where tradition leans toward Puritanism, than obscenity? Let us analyze, with the *Brown* court, this attempted legal magic trick.

Shoehorning Violence into Obscenity: An Ineffective Legal Magic Trick

The technique consists in taking the acceptable threshold for regulating nonprotected speech, and adding the new disfavored category, in this case, violent speech, to the list of speech types the threshold applies to, in this case, obscenity. In other words, as explained by the *Brown* court, "to make violent-speech regulation look like obscenity regulation." The aim is to confuse the judge into thinking that since the previous regulation has passed constitutional muster, the new regulation is valid as well. The *Brown* court would have none of it: "That does not suffice," it wrote, swiftly disposing of the issue. Let's break down this legal magic trick, which had been used by both the California and the Indianapolis regulators.

While the regulation of obscenity is part of the "American tradition," it was not until 1973 with the *Miller v. California* case that the Supreme Court established the current test for properly regulating obscenity. In *Miller*, it wrote that "a work may be subject to state regulation where that work, taken as a whole, appeals to the prurient interest in sex; portrays, in a patently offensive way, sexual conduct specifically defined by the applicable state law; and, taken as a whole, does not have serious literary, artistic, political, or scientific value." It further established a three-part test that anyone who has studied media law in college in the United States should, at least vaguely, recall:

The basic guidelines for the trier of fact must be:

(a) whether "the average person, applying contemporary community standards" would find that the work, taken as a whole, appeals to the prurient interest

(b) whether the work depicts or describes, in a patently offensive way, sexual conduct specifically defined by the applicable state law, and

(c) whether the work, taken as a whole, lacks serious literary, artistic, political, or scientific value.

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The legal magic trick of making an impermissible content-based regulation look like a permissible content-based regulation involves using as many keywords of the *Miller* test as possible, while replacing "sexual conduct" and "prurient interest" with the new category of disfavored speech. See for yourself if the California violent-videogame regulation sounds like a permissible *Miller* regulation. Under the California statute, a violent videogame, the sale of which is restricted to minors, is defined as

> a videogame in which the range of options available to a player includes killing, maiming, dismembering, or sexually assaulting an image of a human being, if those acts are depicted in the game in a manner that does either of the following:
>
> (i) A reasonable person, considering the game as a whole, would find appeals to a deviant or morbid interest of minors.
>
> (ii) It is patently offensive to prevailing standards in the community as to what is suitable for minors.
>
> (iii) It causes the game, as a whole, to lack serious literary, artistic, political, or scientific value for minors.

While the *Miller* test is not reproduced completely verbatim, all of our *Miller* keywords are present: our "average person" (now a "reasonable" person), an "appeal" to some base instinct, our "contemporary community standards" (now "prevailing standards in the community"), our "patently offensive content" (reproduced verbatim), and our savings clause, under which a work can survive censorship if the work presents "serious literary, artistic, political, or scientific value" (reproduced quasi-verbatim save for some syntax differences). The "prurient interest" is replaced by the "deviant or morbid interest of minors"—note the use of the word "deviant" in the videogame regulation, which in the American tradition is most often tied to sexual behavior—another way to tie to *Miller*.

This trick is an effective one both to the untrained eye of public opinion and, sometimes, to that of some lower court judges, as had been the case in Indianapolis. The *Brown* court, well trained, saw right through the magic trick: "Our cases have been clear that the obscenity exception to the First Amendment does not cover whatever a legislature finds shocking, but only depictions of "sexual conduct."

The significance of this part of the ruling, then, is that it eviscerates political arguments of the kind brought forth by Senator Lieberman. Even if you agree with him that "like the Grinch who stole Christmas, these violent videogames threaten to rob this holiday season of its spirit of goodwill," even

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if you find it *morally* wrong for players to be able to virtually "finish" their opponents by choosing "a method of murder, ranging from ripping the heart out to pulling off the head of the opponent with spinal cord attached," from a *legal* standpoint, your opinion and beliefs are irrelevant. The only thing that matters is whether the depiction of violence is protected by the First Amendment. It is.

The *Miller* obscenity regulation targeted both adults and minors. But perhaps there is something special about minors that would justify restraining their access—and theirs only—to materials that is otherwise protected speech? Perhaps there is something in case law that would support a contention that, "Okay, violent videogames are protected under the First Amendment, and we can't restrict adults' access to them, but we must protect the youngens! And certainly, this justifies an exception to the First Amendment!!" The California legislator thought so, and so did its lawyers. Applying our systematic method of analysis, we must now dissect this argument, as did the *Brown* court before us.

Protecting Mayor La Guardia's Children's Lunch Money: Aren't Minors Different?

Examples abound of activities restricted to minors but not to adults. All states restrict the age at which one can drive a car or purchase alcohol, and courts have upheld such regulations.[88] But these laws are about constitutionally *un*protected activities. How about constitutionally protected activities, such as speech?

The key here is that minors *do* have First Amendment rights: "Minors are entitled to a significant measure of First Amendment protection, and only in relatively narrow and well-defined circumstances may government bar public dissemination of protected materials to them."[89] In *West Virginia State Board of Education v. Barnette* (1943),[90] the Supreme Court held that a compulsory flag-salute for public schoolchildren violated their First Amendment rights. In *Tinker v. Des Moines Independent Community School District* (1969), three public school students had been suspended for wearing black armbands to protest the government's policy in Vietnam. The Supreme Court held that "in wearing armbands, the petitioners were quiet and passive. They were not disruptive, and did not impinge upon the rights of others. In these circumstances, their conduct was within the protection of the Free Speech Clause

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of the First Amendment. . . . First Amendment rights are available to teachers and students, subject to application in light of the special characteristics of the school environment." Lastly, in *Burstyn*, the Supreme Court noted that "even if it be assumed that motion pictures possess a greater capacity for evil, particularly among the youth of a community, than other modes of expression, it does not follow that they are not entitled to the protection of the First Amendment or may be subjected to substantially unbridled censorship."[91] Let's remember that the right to speak, under the judicial interpretation of the constitution, includes the right to *receive* the speech of others.

Let's ask, then: In which "*narrow and well-defined circumstances* may government bar public dissemination of protected materials" to minors?[92] Under the Supreme Court's jurisprudence, only by meeting that threshold could a regulator's restriction regarding minors' access to violent videogames pass muster. To support its argument that its statute did indeed fit within these narrow and well-defined circumstances, the California regulator relied heavily on the case of *Ginsberg v. New York* (1968), in which the Supreme Court upheld a New York statute regulating obscenity for minors. As the *Brown* court notes, "California's statute mimics" the *Ginsberg* statute. In *Ginsberg*, the Supreme Court "approved a prohibition on the sale to minors of sexual material that would be obscene from the perspective of a child. We held that the legislature could "adjus[t] the definition of obscenity 'to social realities by permitting the appeal of this type of material to be assessed in terms of the sexual interests' . . . of . . . minors." And because "obscenity is not protected expression," the New York statute could be sustained so long as the legislature's judgment that the proscribed materials were harmful to children 'was not irrational.'"[93] In other words, the prohibition to sell certain content to minors, but not to adults, was upheld only because the speech at issue (obscenity) was not protected for anyone to begin with. Here, again, we observe the difference in thresholds between protected and not protected speech. And, here again, the *Brown* court refuses to fall in the shoehorning trap set by the California legislator: "The California Act is something else entirely. It does not adjust the boundaries of an existing category of unprotected speech [obscenity] to ensure that a definition designed for adults is not uncritically applied to children. California does not argue that it is empowered to prohibit selling offensively violent works to adults—and it is wise not to, since that is but a hair's breadth from the argument rejected in *Stevens*. Instead, it wishes to create a wholly new category

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of content-based regulation that is permissible only for speech directed at children. That is unprecedented and mistaken."

The *Brown* court then ties its reasoning back to the discussion of American tradition (or, in this case, lack thereof): "California's argument would fare better if there were a longstanding tradition in this country of specially restricting children's access to depictions of violence, but there is none." Going back to the heightened threshold that must be met to regulate speech, even for minors, it concludes:

> We have no business passing judgment on the view of the California Legislature that violent videogames (or, for that matter, any other forms of speech) corrupt the young or harm their moral development. Our task is only to say whether or not such works constitute a "well-defined and narrowly limited clas[s] of speech, the prevention and punishment of which have never been thought to raise any Constitutional problem" (the answer plainly is no); and if not, whether the regulation of such works is justified by that high degree of necessity we have described as a compelling state interest (it is not). Even where the protection of children is the object, the constitutional limits on governmental action apply.

In the end—and, this shouldn't come as a surprise at this point—the First Amendment is not a question of moral judgment. It is simply a question of thresholds.

In order to meet that threshold (the "high degree of necessity we have described as a compelling state interest"), California tries one last time to differentiate videogames from other media. That difference, it claims, is that videogames are *interactive*. On account of that, the legislator claims, playing violent videogames actually causes the commission of physical violence. The prevention of that commission, not the content of the games themselves, is that elusive "compelling state interest." Will the threshold finally be met?

What If Violent Videogames Actually Caused Physical Violence?

The argument that media must be regulated because it causes the commission of violence, or of other illegal acts, is not new. As the *Brown* court recalls, "in the 1800's, dime novels depicting crime and 'penny dreadfuls' (named for their price and content) were blamed in some quarters for juvenile delinquency. When motion pictures came along, they became the villains instead." Quoting from a 1909 *New York Times* article titled "Moving

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Pictures as Helps to Crime," "the days when the police looked upon dime novels as the most dangerous of textbooks in the school for crime are drawing to a close. . . . They say that the moving picture machine . . . tends even more than did the dime novel to turn the thoughts of the easily influenced to paths which sometimes lead to prison."[94]

Then, there were comic books. In *Katzev v. County of Los Angeles* (1959),[95] the California Supreme Court struck down a Los Angeles County ordinance that prohibited the sale or circulation of any "crime comic book" to any child under the age of eighteen. The county's rationale had been that "many children have been incited to commit crimes as a consequence of looking at crime 'comic' books," and "such books destroy the moral fiber of children and incite them to crime and juvenile delinquency."

Radio, the story went, also apparently incited minors to commit crimes. In the 1930s and 1940s, the Federal Radio Commission was bombarded by demands to silence the popular *Gang Busters* program, a "true crime" radio broadcast, especially after one thirteen-year-old boy listened to the program, "got excited," and shot grandma.

"It was less than 20 years ago," a concerned citizen wrote the broadcast regulator, "that we segregated first offenders from hardened criminals, in order not to have them 'educated' to ways of crime by the veterans. But Gangbusters (sic) teaches them the latest tricks and ads the thrill of adventure to it. The fact that the program ends up with a vapid 'crime doesn't pay' sophism means nothing to impressionistic youth."[96]

When regulations of such materials were actually passed, they eventually failed in court, in part because the "compelling state interest" threshold could not be met. So, for the argument to succeed in the twenty-first century, the legislator needed to distinguish videogames from these previous media. It would try to do so by playing the *interactivity* card: "California claims that videogames present special problems because they are 'interactive,' in that the player participates in the violent action on screen and determines its outcome." 'Not so fast,' the *Brown* court responded. Participation of the audience in the action dates back to at least 1969 and *Sugarcane Island*, the first choose-your-own adventure story. Quoting from Judge Posner in the *Kendrick* case, it retorts: "all literature is interactive. 'The better it is, the more interactive. Literature when it is successful draws the reader into the story, makes him identify with the characters, invites him to judge them and quarrel with them, to experience their joys and sufferings

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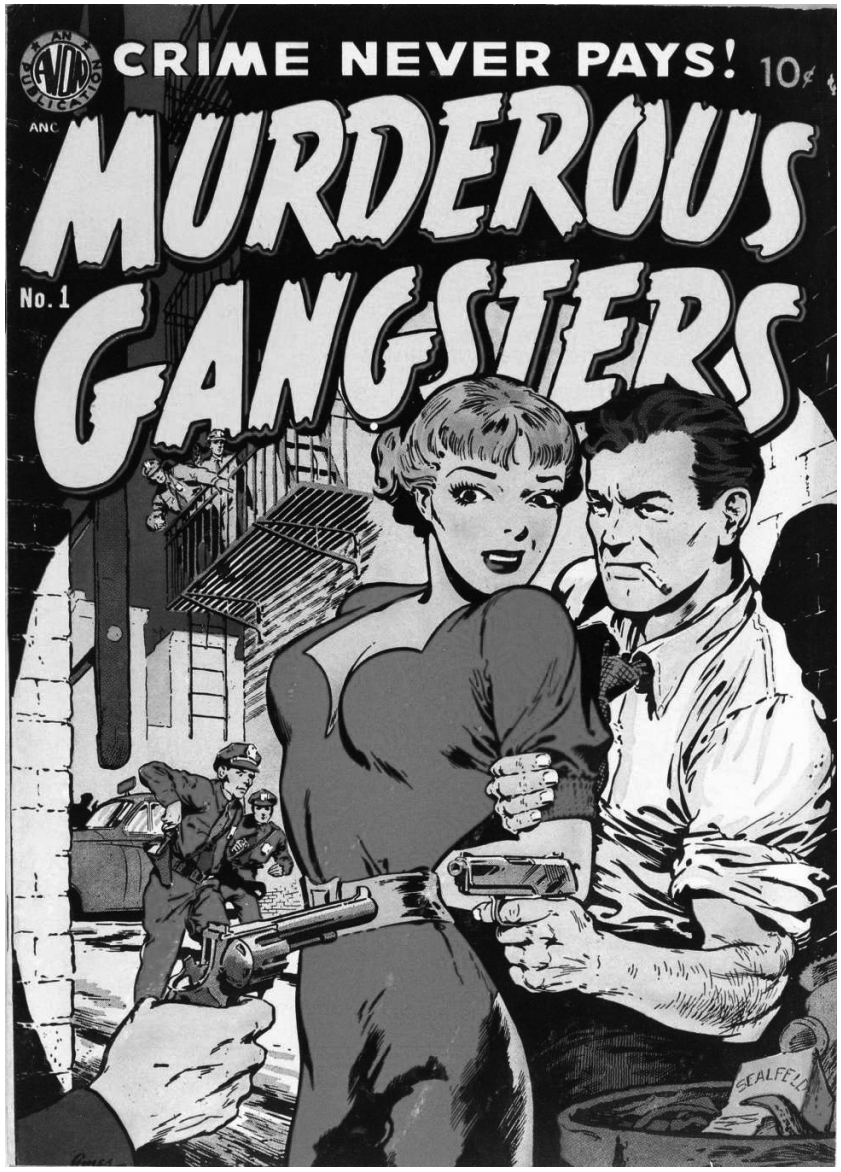

Figure 8.5
A crime comic book. *Murderous Gangsters #1*, July 1951.

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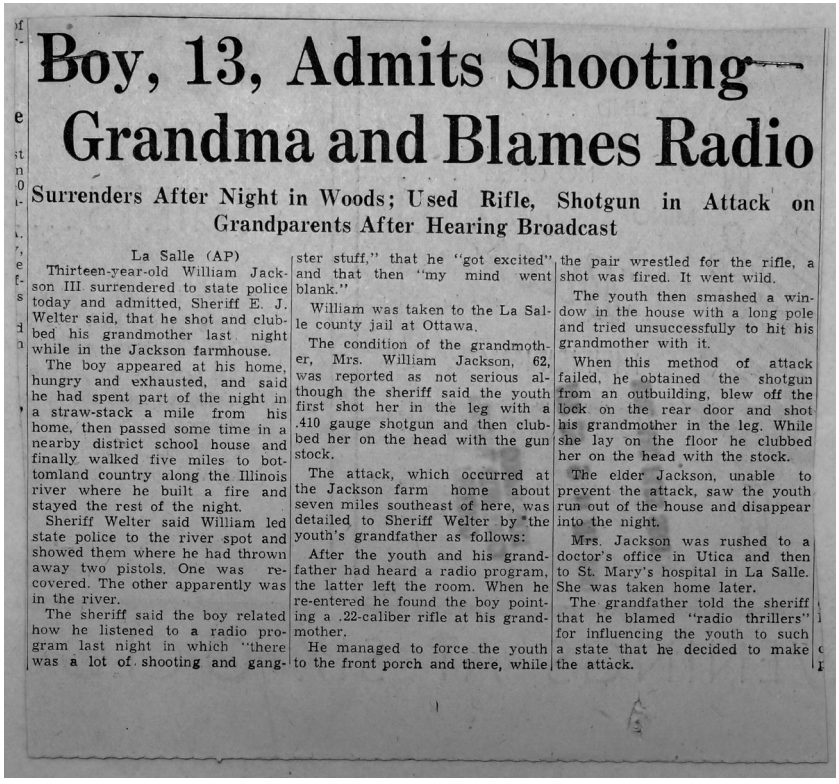

Boy, 13, Admits Shooting Grandma and Blames Radio

Surrenders After Night in Woods; Used Rifle, Shotgun in Attack on Grandparents After Hearing Broadcast

La Salle (AP)

Thirteen-year-old William Jackson III surrendered to state police today and admitted, Sheriff E. J. Welter said, that he shot and clubbed his grandmother last night while in the Jackson farmhouse.

The boy appeared at his home, hungry and exhausted, and said he had spent part of the night in a straw-stack a mile from his home, then passed some time in a nearby district school house and finally walked five miles to bottomland country along the Illinois river where he built a fire and stayed the rest of the night.

Sheriff Welter said William led state police to the river spot and showed them where he had thrown away two pistols. One was recovered. The other apparently was in the river.

The sheriff said the boy related how he listened to a radio program last night in which "there was a lot of shooting and gangster stuff," that he "got excited" and that then "my mind went blank."

William was taken to the La Salle county jail at Ottawa.

The condition of the grandmother, Mrs. William Jackson, 62, was reported as not serious although the sheriff said the youth first shot her in the leg with a .410 gauge shotgun and then clubbed her on the head with the gun stock.

The attack, which occurred at the Jackson farm home about seven miles southeast of here, was detailed to Sheriff Welter by the youth's grandfather as follows:

After the youth and his grandfather had heard a radio program, the latter left the room. When he re-entered he found the boy pointing a .22-caliber rifle at his grandmother.

He managed to force the youth to the front porch and there, while the pair wrestled for the rifle, a shot was fired. It went wild.

The youth then smashed a window in the house with a long pole and tried unsuccessfully to hit his grandmother with it.

When this method of attack failed, he obtained the shotgun from an outbuilding, blew off the lock on the rear door and shot his grandmother in the leg. While she lay on the floor he clubbed her on the head with the stock.

The elder Jackson, unable to prevent the attack, saw the youth run out of the house and disappear into the night.

Mrs. Jackson was rushed to a doctor's office in Utica and then to St. Mary's hospital in La Salle. She was taken home later.

The grandfather told the sheriff that he blamed "radio thrillers" for influencing the youth to such a state that he decided to make the attack.

Figure 8.6
"Boy, 13, Admits Shooting Grandma and Blames Radio." Records of the Federal Communications Commission.

as the reader's own.'" Therefore, it concludes, "as for the argument that videogames enable participation in the violent action, that seems to us more a matter of degree than of kind."

Once again, the threshold for regulation, that of the existence of a "compelling state interest," is not met. For it to be met, "the State must specifically identify an "actual problem" in need of solving, and the curtailment of free speech must be necessary to the solution. That is a demanding standard. "It is rare that a regulation restricting speech because of its content will ever be permissible."

What if the state could actually prove that violent videogames, interactive or not, *cause* the commission of *actual* violence? Perhaps, then, the

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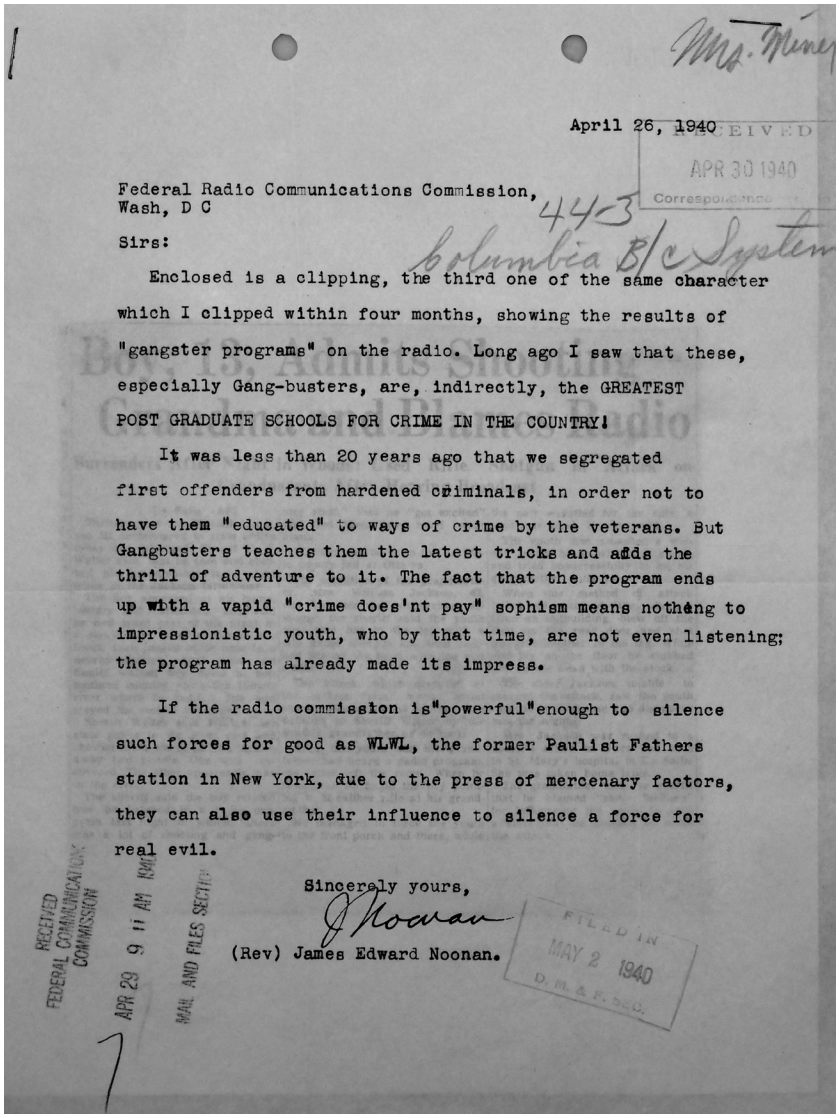

April 26, 1940

RECEIVED
APR 30 1940
Correspondence

Federal Radio Communications Commission,
Wash, D C

443

Columbia B/C System

Sirs:

Enclosed is a clipping, the third one of the same character which I clipped within four months, showing the results of "gangster programs" on the radio. Long ago I saw that these, especially Gang-busters, are, indirectly, the GREATEST POST GRADUATE SCHOOLS FOR CRIME IN THE COUNTRY!

It was less than 20 years ago that we segregated first offenders from hardened criminals, in order not to have them "educated" to ways of crime by the veterans. But Gangbusters teaches them the latest tricks and adds the thrill of adventure to it. The fact that the program ends up with a vapid "crime does'nt pay" sophism means nothing to impressionistic youth, who by that time, are not even listening; the program has already made its impress.

If the radio commission is"powerful"enough to silence such forces for good as WLWL, the former Paulist Fathers station in New York, due to the press of mercenary factors, they can also use their influence to silence a force for real evil.

Sincerely yours,

(Rev) James Edward Noonan.

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Figure 8.7
(Rev) James Edward Noonan letter to the Federal Radio Communications Commission, April 26, 1940. Records of the Federal Communications Commission.

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standard could be met. But the *Brown* court does not need to answer that question because "at the outset, [California] acknowledges that it cannot show a direct causal link between violent videogames and harm to minors." And, in the field of the "strict scrutiny" standard, it is not just the government *interest* in regulating that must be "compelling," but the *evidence* presented must be compelling as well. California, the *Brown* court clarifies, "claims that it need not produce such proof because the legislature can make a predictive judgment that such a link exists, based on competing psychological studies. . . . But . . . California's burden is much higher, and because it bears the risk of uncertainty, ambiguous proof will not suffice." The court then delves into the evidence, which "is *not* compelling."

> California relies primarily on the research of Dr. Craig Anderson and a few other research psychologists whose studies purport to show a connection between exposure to violent videogames and harmful effects on children. These studies have been rejected by every court to consider them, and with good reason: They do not prove that violent videogames cause minors to act aggressively (which would at least be a beginning). Instead, "[n]early all of the research is based on correlation, not evidence of causation, and most of the studies suffer from significant, admitted flaws in methodology." They show at best some correlation between exposure to violent entertainment and minuscule real-world effects, such as children's feeling more aggressive or making louder noises in the few minutes after playing a violent game than after playing a nonviolent game.
>
> One study, for example, found that children who had just finished playing violent videogames were more likely to fill in the blank letter in "explo_e" with a "d" (so that it reads "explode") than with an "r" ("explore"). The prevention of this phenomenon, which might have been anticipated with common sense, is not a compelling state interest.
>
> Even taking for granted Dr. Anderson's conclusions that violent videogames produce some effect on children's feelings of aggression, those effects are both small and indistinguishable from effects produced by other media. In his testimony in a similar lawsuit, Dr. Anderson admitted that the "effect sizes" of children's exposure to violent videogames are "about the same" as that produced by their exposure to violence on television. And he admits that the same effects have been found when children watch cartoons starring Bugs Bunny or the Road Runner, or when they play videogames like Sonic the Hedgehog that are rated "E" (appropriate for all ages), or even when they "vie[w] a picture of a gun."

This ruling definitively settles the score on a recurrent issue. The "degree of certitude that strict scrutiny requires" for a subject-matter restriction on speech to pass muster, then, can only be *causation*, not *correlation*.

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There is no question that some videogames are ultraviolent. As Moore's law takes its course, they are likely to continue to become more and more realistic and immersive. Ultimately, what the *Brown* case tells us is that no matter the emotional dimension of the societal impact of videogames, in law, what matters is whether the applicable standard has been met. Realtors' motto is "Location, location, location!" First Amendment judges' should be "Threshold, threshold, threshold!"

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9 Do You Speak Videogame Law? Global Industry, Local Laws and Practices

Why was *Wolfenstein 3D*, a game where the goal is to *defeat* Nazis, banned in Germany for nearly thirty years? Why was the release of *Fallout 3*, a game developed in the United States, delayed worldwide because of Australian censors? Why was Vodka Drunkenski, a character in Nintendo Japan's *Punch-Out!!*, renamed Soda Popinski both in the United States and then in Western Europe, where the pun on his name made no cultural sense? Why were British cartridges of *FIFA 15* removed from the shelves in France by a court order? And why won't French game cartridges work in Quebec's consoles, even though the Canadian province shares the same language? The answers are rooted deep in legal forces, which I organize around three categories in this chapter. One force is fairly obvious, although one might not think about it when gaming merely domestically: laws regarding media content are different in different part of the world, and studios and distributors frequently create localized versions of their games to comply with local regulations. Yet, other legal forces are invisible to the untrained eye. Negotiation cultures, contractual practices, and minute business, labor, or consumer-protection laws vary widely from one region to another and, indirectly but effectively, create differentiated gaming experiences. Finally, the forces of globalization clash with states' incentives to erect trade barriers that radically affect both industry and gamers. Do you speak videogame law? Let's take a deep international dive.

Of Hot Coffee Mods and Blurred Nazi Flags: The Impact of Local Content Control Laws

All independent countries get to regulate media content the way they like. Cultural disparities lead to disparities in the legal implementation of social

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norms, which in turn lead to a variety of gaming experiences around the world. We have seen in chapter 8 that the United States Supreme Court ruled in 2011 that the prohibition of violent videogames, whether in general or even only for minors, was unconstitutional because the regulation of violent content, for any media, is not part of the "American tradition." But such regulation is part of the tradition of many other countries, which, in turn, have banned or otherwise restricted access to violent games. In many parts of the world, matters related to sex, ranging from obscenity to nudity to mere "improper attires,"[1] have been regulated, using a wide range of techniques and intensities. Countries in the Middle East that apply strict interpretations of religious scriptures prohibit depictions of the Prophet Muhammad.[2] In many European countries, showing Nazi symbols outside a historical/educational setting is illegal. The list goes on. Mark Wolf's edited volume with MIT Press, *Videogames Around the World*, provides a rich survey of the industry in thirty-nine countries and regions, and many of the chapters address localized content regulation practices (although usually only in passing, since law is not the focus of the book). In this section, rather than presenting a hodgepodge of local content specificities around the world, and in keeping with Wolf's hope that such surveys will provide a foundation for actual comparative studies,[3] I have arranged different regulatory approaches by the type of governmental intervention they entail, and then analyzed their impact on industry. I found that three types of approaches are prevalent. On one end of the spectrum are countries that simply do not regulate content at all or do so without active state intervention, using strictly industry-based, legally optional control mechanisms. At the opposite end of the spectrum are countries where direct, active intervention by lawmakers and state-controlled regulatory bodies limit the range of content available to gamers. In the middle are hybrid systems, wherein the state typically enforces, through coercive legal mechanisms, classifications self-issued by industry. Observation of these practices is our first subsection.

These divergences in approaches make it increasingly difficult for game companies to release their creations worldwide while keeping compliant with a myriad of local laws. One industry answer to this issue has been to geo-version games, that is, to release a modified version of the base game in each market that requires content-tailoring. This is inefficient and not foolproof, as we will observe, because it does not prevent gray market imports of noncompliant games. As a result, many companies have instead harmonized

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their products globally by abiding to the lowest common denominator of content control. I call this "preempting" local law, because the technique involves analyzing the laws of target markets and proactively incorporating the lowest common denominator (the strictest law) into its own corporate policy for game-content development before distributing the resulting game in all target markets. This practice, pioneered by Nintendo, is the subject of our second subsection.

Different Locales, Different Regulatory Mechanisms

Three overall types of mechanisms come into play when regulating the content of games: regulations that are fully industry-based and those that are fully state-driven mark each end of the regulatory spectrum; in between stand a variety of hybrid models. Let us examine them separately before comparing them and drawing four conclusions that, practically, affect the gamer's experience.

Fully industry-based Several countries or regions have historically considered videogames as meaningless artifacts of play not worthy of regulatory interest, although this trend seems to be fading. Wesley Kirinya, a Kenyan expert, notes that African decolonization processes

> set the stage of dictatorships, military governments, and false democracies, which in turn led to restrictions regarding electronic media. Videogames, however, were seen as harmless. They neither crossed the agenda of political elite nor had a significant audience. . . . Foreign games were well received, mainly because the videogame was a medium for children's entertainment that was not seen as interfering with political circles.[4]

In Soviet Russia, many games were developed in state labs by state employees without the government ever knowing or caring about it.[5] There are also places where game content is not regulated by governments even when it oftentimes causes social and political outrage. Such is the case of the United States.

In the United States, ratings exist for videogames, administered under the auspices of the Entertainment Software Rating Board (ESRB). The ESRB is an industry group designed to get politicians off game publishers' backs.[6] It also serves a useful purpose in helping the many parents who are clueless about industry offerings choose games suitable for their children's age group. It should be stressed that there is no *legal* requirement that games be rated. In fact, the *Brown* court, discussed in chapter 8, did not just rule that prohibiting

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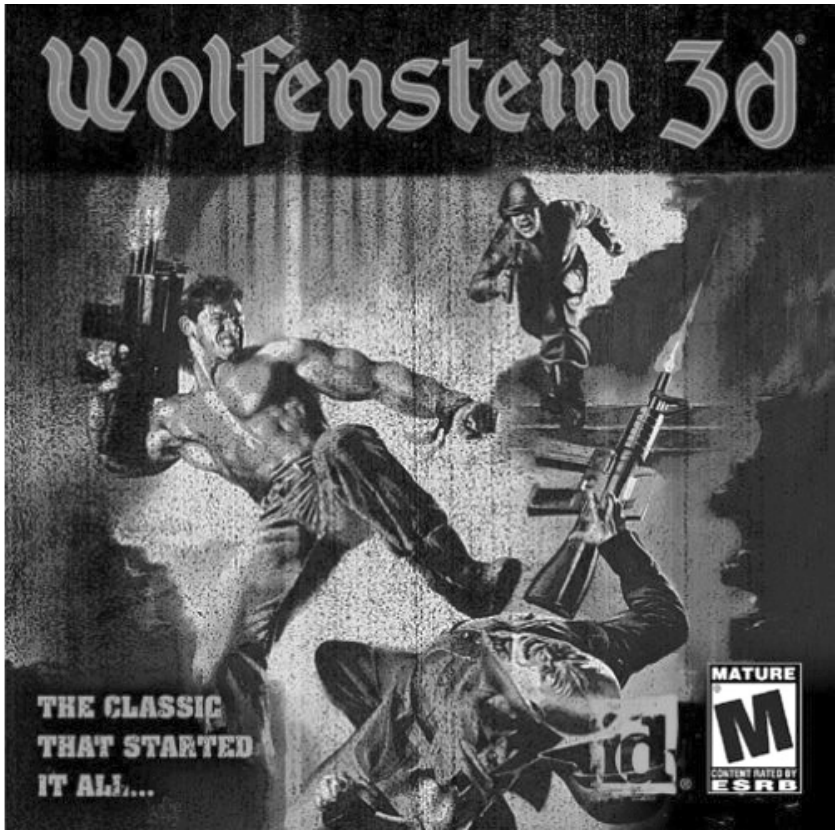

Figure 9.1
Cover art for a US version of *Wolfenstein 3D*, including its *voluntary* ESRB rating of "M for Mature" (ages 17+) (bottom right).

the sale of violent videogames to minors is unconstitutional on First Amendment grounds; it also upheld the Court of Appeals for the Ninth Circuit's decision, which had taken great care to explain why *mandating* the implementation of a rating system through age-appropriateness labels was itself unconstitutional, because such as system would be *forced speech*:

> Generally, "freedom of speech prohibits the government from telling people what they must say."
>
> We hold that the [California statute's] labeling requirement is unconstitutionally compelled speech under the First Amendment because it does not require the disclosure of purely factual information: but compels the carrying of the State's controversial opinion [that certain games are only suitable for a particular age group].[7]

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As a result, while game companies, to appease politicians, concerned parents, and wary retailers, might voluntarily affix age-rating labels on their products, they cannot be compelled to do so, and, when they do, it's not *illegal* for a retailer to sell a cartridge to an audience younger than the one intended for. The ESRB is a marketing and public relations tool, not a state-mandated or enforced system.

We also discussed in chapter 8 how the potential psychological harm resulting from being exposed to certain media is not a factor the Supreme Court takes into consideration when examining the constitutionality of regulations affecting freedom of expression.[8] Another resulting peculiarity of the US Constitution, then, is that it protects hate speech and hate groups, including a group of neo-Nazis that was allowed to demonstrate in a neighborhood prominently populated by Holocaust survivors in 1978 (see the discussion of the *Skokie* case). The *Skokie* jurisprudence has had a clear impact on the US videogame landscape, in that games that are overtly racist cannot be banned by the government. They can, of course, be removed from shelves by retailers since they have discretion as to what products to carry. Yet it is not illegal to produce, promote, or sell such "games." In his concurring opinion to the *Brown* case, Justice Alito recorded a number of games "in which players engage in 'ethnic cleansing' and can choose to gun down African-Americans, Latinos, or Jews." The justice also mentioned a game we discussed in chapter 4, *Custer's Revenge*, in which "the goal is to rape Native American women."[9] In fact, a 2002 Anti-Defamation League study reported in *Wired* magazine suggested that "the proliferation of so-called 'white power games,' which can be bought or downloaded online, is part of a larger strategy by extremists to recruit younger members." These games include disgustingly evocative titles such as *Shoot the Blacks* and *Concentration Camp Rat Hunt*. One of them, *Ethnic Cleansing*, includes "racist rock music, with hate-filled lyrics," and "was released on Jan. 21, Martin Luther King Day,"[10] obviously to "benefit" from the shock factor. But shock was not a factor the *Skokie* courts agreed to take into consideration, and neither is disgust, as the *Brown* court concluded in 2011: "Disgust is not a valid basis for restricting expression."[11] More broadly, the *Brown* case reflects an American peculiarity, which is that freedom of speech is a value that seldom allows for balancing against other interests. Even more broadly, it reflects a cultural disdain for government intervention in the realm of personal freedom. Not only can the government not ban games, but it cannot even impose a requirement that games be

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labeled with an age rating. The ESRB system, which relies solely on market forces to administer a semblance of content regulation in the field of videogames, is a reflection of this approach: leave it to the people to decide what is right and what is wrong.

At the other end of the regulatory-techniques spectrum is active, direct state intervention in the regulation of videogame content.

Fully state-controlled It shouldn't come as a surprise that authoritarian countries tend to rely on such intervention to control social life. In Venezuela, a left-leaning authoritarian government that since 1999 implements the "Bolivarian Revolution," Western media is perceived as a threat to socialist ideals and cultural sovereignty. This critique of Western media is not unique to authoritarian governments, of course. In 1980, UNESCO's MacBride Commission had already "charged that under the guise of the free flow of information, some governments and transnational media had 'on occasion tried to undermine internal stability in other countries, violating their sovereignty and disturbed national development.'"[12] Herbert Schiller made a convincing argument that US transnational corporations, hand in hand with the US government, imposed cultural imperialism in developing countries, including by creating a dependency or hardware and software.[13] In Venezuela, such critique has led to a 2009 law that banned the importation, distribution, sale, and use of *bélicos* digital games and toys in the country. *Bélicos* is defined as a game that contains information or images that promote or incite violence or the use of weapons. The ban followed the release of the game *Mercenaries 2: World in Flames* by US-based Pandemic Studios. The objective of the game is to kill the president of Venezuela. Rather than banning just the game, however, the Venezuelan National Assembly opted from a broad ban on the genre. The penalty for importing, producing, or distributing such *bélicos* games was set at three to five years in jail. Experts suggest that the effect of the law on domestic production studios was drastic: "The broad definitions supplied in the legislation . . . have caused a great deal of uncertainty for Venezuelan-based studios, leading at least one studio—the celebrated Teravision—to relocate most of its headquarters to Columbia."[14]

In China, where videogames have always been regarded as perverting children and teenagers' minds, and have been qualified by the Communist Party as "electronic heroin,"[15] the government went much further that Venezuela. The Ministry of Culture enacted a radical ban in 2000 of all coin-op

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Figure 9.2
Screenshot of the *Grand Theft Auto: San Andreas* "hot coffee mod" gameplay.

and console games and devices, across the board. The ban does not apply to online games, which reveals ulterior motives (as we discuss later in this section). It still illustrates the existence of drastic regulatory practices in certain parts of the world.

More surprising is the fact that direct, active government involvement in regulating game content is not the exclusive lot of authoritarian governments. To wit: Australia and Germany.

For many years, Australia "experienced a unique—and arbitrary, possibly draconian—system of digital game classification."[16] Pursuant to a 1995 law, many games otherwise available in other Western democracies have simply been banned, and not just to minors. *Grand Theft Auto III* was the most notable instance,[17] followed by one of its sequels, *GTA: San Andreas*, after the "Hot Coffee" mod, which enabled players to control their character during a sex act, was revealed.[18] Other banned games included *Getting Up: Contents Under Pressure* (2005), and *BMX XXX* (2002).

How did we get to such drastic measures? The debate in Australia, in the mid-1990s, echoed the rest of the world's concern for protecting children, as well as an argument salient in the US debate, that of the interactive nature of the games, which allegedly produced a higher impact on the impressionable

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youth's mind. During the parliamentary discussion of the proposed legislation in 1994, federal House of Representatives' Peter McGuarun stated, "It is one thing to watch a violent video; it is another thing altogether to be involved in the violence."[19] This comment echoed US Supreme Court Justice Breyer's dissent in the 2011 *Brown* case. Referring to highly realistic games such as first-person-shooter games, the justice argued that the regulation of violent videogames should be permissible under the First Amendment because, unlike speech, "the activity combines speech with action (a virtual form of target practice)."[20] This argument was dismissed in the majority opinion. Australia went the opposite way.

The Classification (Publications, Films and Computer Games) Act of 1995 gave the Federal Classification Board the authority to rate games. Furthermore, the highest rating available from 1995 to 2013 was MA15+, meaning that games that could not be approved for fifteen-year-old teens (that is, games typically subject to a 17+ or 18+ rating elsewhere) would go unrated, effectively banning them by making them illegal to import or sell. The system was highly criticized by the Australian public, "culminating in a registered political party with the introduction of an R18+ category as its sole policy platform; a federal government-led public consultation that saw 58,437 submissions, 98% in favor of an R18+ classification; and the largest public petition in the history of Australia, supporting an R18+ classification with 89,210 signatures, exceeding a previous petition to change widely unpopular industrial relations laws."[21] The legal regime was amended in 2013 to include an 18+ rating. This still does not mean that all games get rated. Some will get denied classification and are, therefore, effectively censored in Australia. For example, experts noted that, in June 2013, *Saints Row IV* (2013) became the first videogame refused classification under the amended legislation (for "sexualized violence" in the guise of an "alien anal probe" gun) and was closely followed by *State of Decay* (2013) (for the depiction of real-world drugs), indicating that the regular censorship of videogames in Australia may well continue into the future."[22]

Germany is the other Western democracy that shares with Australia both the top-down, fully government-run regulatory system for videogames, as well as draconian substantive content-control rules. The current German legal system derives from the regime set in West Germany during the Cold War. East Germans had access to few computers, most of them smuggled, while on the West German side, the country was flooded with Atari VCS: Atari

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Figure 9.3
State of Decay was refused classification in Australia because players increase their abilities by consuming "medications," including "both legal and illicit substances such as methadone, morphine, amphetamines, stimulants, acetaminophen, ibuprofen, codeine, aspirin, 'trucker pills,' painkillers and tussin." Luke Reilly, "State of Decay Refused Classification in Australia," *IGN*, June 26, 2013.

Germany was started in 1981, and even Activision opened shop in 1985.[23] To understand the German approach to regulation, one needs to understand the historical context. First, most of Europe had suffered the horrors of Nazism in the flesh, but Germany is where it originated. As a result, after World War II, the new democratic West German government took drastic steps to ban Nazi imagery (so did several other countries, including France, where the ownership and display of Nazi memorabilia is also generally illegal). Second, Hitler had been indoctrinating children as early as 1922 through the Hitler Youth movement, a paramilitary, Nazi version of the Boy Scouts. As a reaction, in 1951, the Federal Republic of (West) Germany passed the "Law for the Protection of Minors in Public," which, among other things, regulated media consumption of minors, with an eye out for possible indoctrination. In 1984, the law was updated to restrict access of minors to arcades, due in part to the links between coin-op and gambling.

There is nothing specific to Germany here, as many countries around the world suffered from the "arcade scare" we described in the US context in chapter 8, and many societies also suffered from ties between coin-op and

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local mafias.[24] Where Germany went further is that it also started banning the sale of certain *console* games to minors, starting with Activision's *River Raid* for the Atari VCS, "because of its military content."[25] In 1994, Germany implemented a new system, the Unterhaltungssoftware Selbstkontrolle (Entertainment Software Self-Regulation), known as USK. But just as "democratic republics" are rarely democratic, the "Entertainment Software Self-Regulation" has little to do with industry self-regulation. Yes, it is funded by industry. However, the ratings are decided upon by independent experts, including government representatives.[26] The guidelines for rating are not defined by industry but, under the aforementioned Law for the Protection of Minors in Public, by the Ministries of the Federal States with jurisdiction over young persons' affairs.[27] Games that "involve violent game concepts and frequently generate a dark and threatening atmosphere," including "first-person shooters and action adventures," cannot be sold to persons under eighteen.

According to the USK, "the aim is to protect minors from the vehemence of the images and the violent concepts and from any possible identification with game characters whose actions may run contrary to ethical and moral norms."[28] Breach of these regulations is a crime pursuant to Article 28 of the German Children and Young Persons Protection Act (JuSchG) and is punishable by a fine of up to €50,000.[29] Finally, since 1984, "games containing representations of violence which both adversely affect and endanger the development of young persons are placed on the index of media deemed unsuitable for children and young persons by the Department for Media Harmful to Young Persons." More drastic than an 18+ USK rating, being placed on "the index," a blacklist, means that the games cannot be publicly advertised or displayed, cannot be distributed via mail order, and can only be purchased "in a special shop to which only adults have access or via the Internet in a restricted user group for adults only."[30] The first casualties of the index were Activision's *River Raid* (a screenshot of which is reproduced in chapter 1), Atari's tank simulation *Battlezone*, and *Speed Racer*, a Commodore 64 driving game reminiscent of the *Death Race* coin-op game that jumpstarted the arcade scare in the US in 1976 (see chapter 8), where the point was to run over bystanders.[31]

According to Petra Meier, the former vice president of the Federal Office for the Examination of Media Harmful to Young People, "*Battlezone* was indexed because of the glorification of war propagated by its content and because the board stated that the content propagated aggressive behavior;

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Figure 9.4
Atari *Battlezone* was blacklisted in Germany because the censor thought it "propagated aggressive behavior."

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River Raid was also indexed because of content seen as a glorification of war and an enhancement of violent behavior; probably 90 per cent of the [several hundred] games that were indexed have been indexed because of the portrayal of violence."[32]

Under Meier's leadership, the office would also index (blacklist) music records such as Rammstein's *Liebe ist Für Alle* Da (Love Is for All) because of lines such as "Bites, kicks, heavy blows, nails, pincers, blunt saws—Tell me what you want," and artwork showing guitarist Richard Kruspe with a masked, naked woman on his knees. Records continue to be indexed at a heavy pace. According to the statistics of the office, 131 albums had been indexed in 2007, 116 in 2008, and 2009 was a record year, with 966 as of November of that year, when *Billboard* magazine reported on the situation.[33] As Cerat Yerli, the founder of German videogame studio Crytek noted, "every area of life in Germany is much more controlled socially or in law [than in the US] and I think Germany therefore thinks it has to take all the responsibility about entertainment or communication channels that could potentially impact culture or young people." As a result, Yerli continues, the Federal Office for the Examination of Media Harmful to Young People "has influenced the games produced in Germany. I think companies have changed the way they develop. The laws definitely have an impact on design and production" of videogames.[34]

A number of games have also been subject to an outright ban, either because of their glorification of violence, racist ideology, or depiction of Nazi symbols. These include *Wolfenstein 3D* (1992), *Mortal Kombat* (1994), and Rockstar Games' *Manhunt* (2003), as well as a flurry of racist and anti-Semitic games.[35]

The result of the German approach, in addition to the ban or sales restrictions on specific games, and in addition to its impact on the way local studios produce games, has been the localization of content of many foreign games specifically for the German market, through manipulation of narratives, cutting of scenes, or visual modifications.[36] A representative example of this process is Virgin Interactive's *Command & Conquer: Red Alert* (1996). In the German version of the game, "soldiers were replaced by robots, violent cutscenes were modified or replaced, and a scene in the intro showing Hitler before his rise to power was cut." Further, "blood was recolored to black in order to make it look like oil, any human death cries were replaced with a noise of a robot shutting down, the noise caused by a tank running over a

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Figures 9.5 and 9.6
In this heavily pixelated DOS (PC) version of *Wolfenstein 3D*, one can clearly recognize a Nazi flag featuring a swastika (top image, right), as well as a portrait of Adolf Hitler (bottom image, right). Although the point of the game was to defeat Nazis, it was "indexed" (banned) in Germany for over thirty years based on the display of Nazi signage.

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soldier was replaced with the sound of a crunch, the song 'Hell March' was cut, the intro was shortened. As a result you can no longer able see (sic) a flashback that shows Hitler shaking hands with Einstein."[37]

The list goes on. In the USK's own words, "Germany has the world's strictest statutory rules for the classification and sale of computer games on image media (e.g. DVDs, Blu-ray, game modules) to minors."[38] While this is not true of "all of the world," Germany certainly has one of the most drastic content-regulation system in the democratic world. Not all of it can be explained by World War II, however.

In France, display of Nazi symbols is also illegal—in fact, French courts were the locus of one of the most important court cases in early global internet regulation, when, in 2000, it forced Yahoo! to remove neo-Nazi content from its servers in the United States, since the content was accessible from France and therefore, it decided, subject to French law.[39] Although the display of Nazi symbolism in videogames sold in France is illegal, the French government never instituted a drastic, state-overseen censorship system like in Germany for videogames, leaving it to the courts to deal with potentially illegal content after the fact.[40]

Neither can the German approach be reduced to its Teutonic origin, since its neighbor Austria's regulatory practices stand in stark contrast. Rather than using blacklists and, generally, a severe top-down regime, Austria stands out for its dialogue-based, multi-stakeholder regimes, and its proactive use of education through "white lists," that is, seals of quality delivered by the Federal Office for the Positive Assessment of Computer and Console Games (BuPP). The Austrian approach was developed explicitly as an alternative to the German USK system. Its objective is to "provide parents, guardians, and others involved in children's upbringing with guidance on the selection of computer games and console games. It does this by giving positive ratings to well-designed games, as well as providing other information and support services. The aim is to help adults to actively engage with their children's computer or console leisure activities."[41] Education, rather than prohibition and repression. Austria is also a participant in the PEGI system, the flagship representative of the third way, a hybrid regulatory mode.

Hybrid regulatory modes PEGI, which stands for Pan-European Game Information, is a rating system developed by the Interactive Software Federation of Europe (ISFE), an industry group. So far, things look similar to the US

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Figure 9.7
Overview of the PEGI rating system iconography. Pan-European Game Information.

ESRB rating system. The difference, however, is that the system has been, in various ways, incorporated into the legal system of the thirty-nine countries (at press time) that use PEGI.[42] As such, it is not an industry system, as in the United States, but a co-regulation system involving both the private sector and the enforcement arm of states. The industry defines the in-game thresholds, and then rates the games on that basis. States then work this into their domestic laws in any way they wish. One peculiarity of the system, then, is that different countries can and have implemented the PEGI system differently based on the idiosyncrasies of their local social contracts. Many countries do not provide for penalties if the ratings are disregarded by retailers. But several do, and the penalty level is country-dependent.

In France, for example, the sale of violent or pornographic videogames to minors, labeled as 18+ through PEGI, is punishable by three years in jail and a 75,000 euro fine.[43] In the UK, the jail term is "only" six months, and the fine 5,000 pounds.[44]

This brief comparative study of content regulation around the world is wildly incomplete. As many of the authors in Wolf's edited volume lamented, there is very little in the historical record of the videogame industry in most countries, and localized academic studies are only beginning to emerge. And for what does exist, the language barrier is usually an insurmountable obstacle

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for a researcher who, like myself, is fluent in only two cultures and languages. As an aside, then, this calls for the production of more comparative studies in both legal game studies and game studies in general. And while some might find this comment hegemonic, for practical reasons, it would be helpful if these were published in languages understandable by most, such as English. For now, the comparison of the few available verifiable data points enable us to draw four conclusions.

First, regulation of content of, and access to, videogames, doesn't actually mean practical impairment of production or play. One theme that emerges from diving into Wolf's survey of thirty-nine counties/regions is that the more the distribution of games is regulated, the more vibrant gray markets emerge. A salient example, in the arcades realm, is provided by South Korea, where "government, in particular the Ministry of Health and Welfare, maintained strict control over electronic entertainment rooms due to concerns about gambling addiction. Although they were illegal during the 1970s, many of these rooms were built in public places, such as theaters and amusement parks. Between 1978 and 1980, some companies imported game and machine merchandise from Japan and reassembled it in pachinko [gambling] or casino game rooms for adults to enjoy. Electronic entertainment rooms remained popular, although they only became legal in the 1990s."[45]

A second take is that, while content regulation (or deregulation) is, on its face, about content, it can in fact be about other things, such as industrial policy and global competition. In South Korea, "the government gradually relaxed videogame regulation beginning in the 1980s, when it decided to transform Seoul into an electronics city. The [personal computer] diffusion project exemplifies this policy. It influenced the growth of Korean gaming because the government requested industry support from major Korean corporations, including Samsung, Hyundai, and LG."[46] Today, South Korea is one of the world's most significant digital innovation hubs, and gaming companies use the country as a test bed for beta releases.[47] In China, the government banned all coin-op and console games and devices in 2000, allegedly to wipe off the map the "electronic heroin" it considers games to be. Yet, the ban did not apply to online games. Why? Because the regulation enabled China to double-dip from a politico-industrial standpoint. On the one hand, it curbed the penetration of foreign culture into the country (the vast majority of the *off*-line offerings were imports or clones of foreign games). And, on the other hand, it primed the pump for the new industry it had decided

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to support, online games, by forcing Chinese gamers to move to the new, favored platform. China supported online gaming because "exports of online games that are made in China and that carry traditional cultural Chinese content enhance China's international soft power."[48] The government's plan was successful, at least domestically: in the year following the offline ban, the domestic sale of online games was multiplied by thirteen.[49] So much for shielding the populace from electronic heroin.

A third take from this brief comparative analysis is that, sometimes, a local content regulation can have global effects. In anticipation of a coordinated global release of its new 2008 game *Fallout 3*, US studio Bethesda filed for classification with the Australian Classification Board. The board refused classification because of a positive reference to the drug morphine. Rather than releasing the game worldwide-minus-Australia, Bethesda delayed the release, altered the game content, removing the reference to morphine, and resubmitted to the Australian Board. It received the 15+ classification a month later. When Bethesda finally released the game worldwide, it was the Australian version that it released: "To avoid confusion among people in different territories, we decided to make those substitutions in all versions of the game, in all territories," a Bethesda executive explained.[50] We will return to the impact of local regulations on global products in the next section.

The fourth take is that, in the field of videogame content regulation, things are in flux. So is, therefore, the gamer's experience. In the United States, it took forty years for videogames to be unequivocally protected as speech under the Constitution. Australia eventually added an 18+ rating option, under popular pressure. In Germany, *Wolfenstein 3D* was finally approved by the USK rating board in 2018, after the Stuttgart attorney general ruled that videogames were to be included in the exemption to the general prohibition of displaying Nazi symbols, applicable to works that "promote art or science, research or teaching, reporting about current historical events or similar purposes."[51] As *PC Gamer* magazine cheerfully noted, "residents of Germany can now join us, legally, in defeating Mecha-Hitler and saving the world from the scourge of fascism. And only 30 years late, too."[52]

Of course, this flux effect is not unique to videogames but occurs with most media, as the new becomes ubiquitous, as youth culture becomes recognized as art (think: Elvis, hip-hop, or graffiti), and, generally, as cultural attitudes evolve. The trend is exacerbated by the clash between local cultural traditions and the needs of industrial development in an increasingly

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integrated global cultural market. This global integration generally forces companies that operate in such an environment, in the game industry and many others, to consider whether their legal strategies should be designed and enforced locally or, instead, globally.

We have just observed several examples of geo-versioning, where a game is offered in different versions in different markets to comply with local law. A global strategy, in contrast, leads to creating a single version of a game for the whole world, which complies with the lowest common denominator, that is, the most stringent law among the countries targeted for distribution. The practical impact of this compliance strategy for gamers is that they are held hostage by the most restrictive country even when the content at stake is not illegal in their own region. Bethesda's *Fallout 3*, where Australian law served as the local common denominator, is a prime example.

Nintendo is one company that gave careful consideration early on to this strategic legal question: to geo-version or to harmonize? Because of Nintendo's global reach, the company's practice provides an excellent case study for analyzing the entanglement between legal and marketing strategies with regard to game development and its impact on players.

Preempting Local Regulations and Tastes for Global Distribution: Nintendo of America and the Lowest Common Denominator

A number of game companies, led by Nintendo of America, have long had a policy of sanitization. Parts of this policy is justified by commercial logic: Nintendo has always positioned its videogame products as family friendly, and it learned a lesson from the *Custer's Revenge* controversy and its negative impact on the market as a whole (see chapter 4). Going with the lowest common denominator in terms of potentially offensive content also has a *legal* benefit when it comes to exporting games in jurisdictions where the legislator cares about regulating such content and where no constitutional tradition of free-speech-extremism stands in the way of such regulatory efforts. Not carrying controversial content enables Nintendo to scale the distribution of its games worldwide without having to face regulatory wrath in a variety of jurisdictions. Violence, nudity, hate speech, and drugs and alcohol became obvious targets for Nintendo, as its legal and marketing strategies became entangled. Nintendo's strategy was implemented in the United States, its largest non-Japanese market and, from there, exported to the rest of the Western world. Note that the Japanese productions remained localized.[53]

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The expression "cultural exception" is usually attached to France—in this case, it applied to Japan as well.

In 1988, Nintendo of America issued its general content guidelines, which were enriched in 1994 with a list of ten specific restrictions and read as follows:

> Nintendo of America's priority is to deliver high quality videogame entertainment for our customers. When those customers are children, parental involvement in their game playing is recommended. Nintendo is concerned that our products do not contain material that society as a whole deems unacceptable.
>
> Consequently, since 1988 we have consistently tested the content of all games developed for Nintendo systems against our evolving game standards. As our business has matured, we have adapted our guidelines to meet the concerns of the members of our target age group and their parents. Although we realize that definitions of social, cultural and political views are highly subjective, we will continue to provide consumers with entertainment that reflects the acceptable norms of society.
>
> The following Game Content Guidelines are presented for assistance in the development of authorized game paks (i.e., both Nintendo and licensee game paks) by defining the type of content and themes inconsistent with Nintendo's corporate and marketing philosophy. Although exceptions may be made to preserve the content of a game, Nintendo will not approve games for the NES, Game Boy or Super NES systems (i.e., audio-visual work, packaging, and instruction manuals) which:
>
> - include sexually suggestive or explicit content including rape and/or nudity;
> - contain language or depiction which specifically denigrates members of either sex;
> - depict random, gratuitous, and/or excessive violence;
> - depict graphic illustration of death;
> - depict domestic violence and/or abuse;
> - depict excessive force in a sports game beyond what is inherent in actual contact sports;
> - reflect ethnic, religious, nationalistic, or sexual stereotypes of language; this includes symbols that are related to any type of racial, religious, nationalistic, or ethnic group, such as crosses, pentagrams, God, Gods (Roman mythological gods are acceptable), Satan, hell, Buddha;
> - use profanity or obscenity in any form or incorporate language or gestures that could be offensive by prevailing public standards and tastes;
> - incorporate or encourage the use of illegal drugs, smoking materials, and/or alcohol (Nintendo does not allow a beer or cigarette ad to be placed on an arena, stadium or playing field wall, or fence in a sports game);
> - include subliminal political messages or overt political statements[54]

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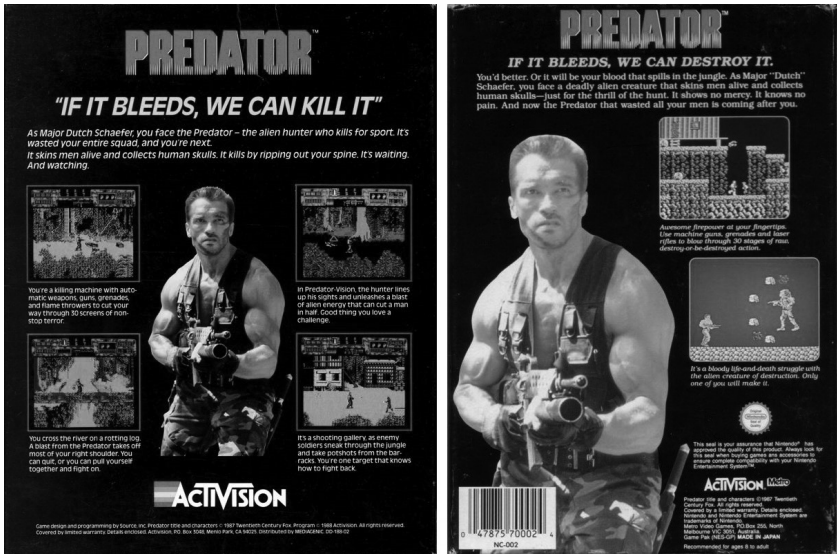
PREDATOR
"IF IT BLEEDS, WE CAN KILL IT"
As Major Dutch Schaefer, you face the Predator – the alien hunter who kills for sport. It's wasted your entire squad, and you're next.
It skins men alive and collects human skulls. It kills by ripping out your spine. It's waiting. And watching.
You're a killing machine with automatic weapons, guns, grenades, and flame throwers to cut your way through 30 screens of nonstop terror.
In Predator-Vision, the hunter lines up his sights and unleashes a blast of alien energy that can cut a man in half. Good thing you love a challenge.
You cross the river on a rotting log. A blast from the Predator takes off most of your right shoulder. You can quit, or you can pull yourself together and fight on.
It's a shooting gallery, as enemy soldiers sneak through the jungle and take potshots from the barracks. You're one target that knows how to fight back.
ACTIVISION
PREDATOR
IF IT BLEEDS, WE CAN DESTROY IT.
You'd better. Or it will be your blood that spills in the jungle. As Major "Dutch" Schaefer, you face a deadly alien creature that skins men alive and collects human skulls—just for the thrill of the hunt. It shows no mercy. It knows no pain. And now the Predator that wasted all your men is coming after you.
Awesome firepower at your fingertips. Use machine guns, grenades and laser rifles to blow through 30 stages of run, destroy-or-be-destroyed action.
It's a bloody life-and-death struggle with the alien creature of destruction. Only one of you will make it.
ACTIVISION
NC-002

Figure 9.8
Back covers of Activision's US releases of *Predator*. Left: the Commodore 64 version. Right: the NES version. On the C64, one "kills"; on the NES, one "destroys."

The content guidelines still exist today as Nintendo of America "Community Guidelines," prefaced with the generic statement, "At Nintendo, we want to create experiences that put smiles on faces, and we believe those smiles are for everyone. We also believe the best experiences happen when we all work together to keep our Nintendo games, online services, and events safe, friendly, welcoming, and fun for all."[55] Starting in 1988, Nintendo's entangled marketing/legal strategy has led the company to alter the version of many NES and SNES games originally produced outside of the United States, or produced in the country for platforms other than Nintendo's.

In the realm of violence, for example, when *Doom* got carried from its 1993 PC version to its 1995 Super Nintendo version, some characters' expressions were tamed: "the bastards" became "them," and "had its ass kicked" became "has been beaten."[56] When Arnold Schwarzenegger's movie *Predator* was turned into an NES game by Activision in 1989, his character's line "If it bleeds, we can *kill* it" became "If it bleeds, we can *destroy* it."[57] The Commodore 64 version, however, kept the original line.[58] And the Nintendo version of *Mortal Kombat* removed blood splatters and the ability for players to kill their opponent by ripping off their head with spinal cord attached.

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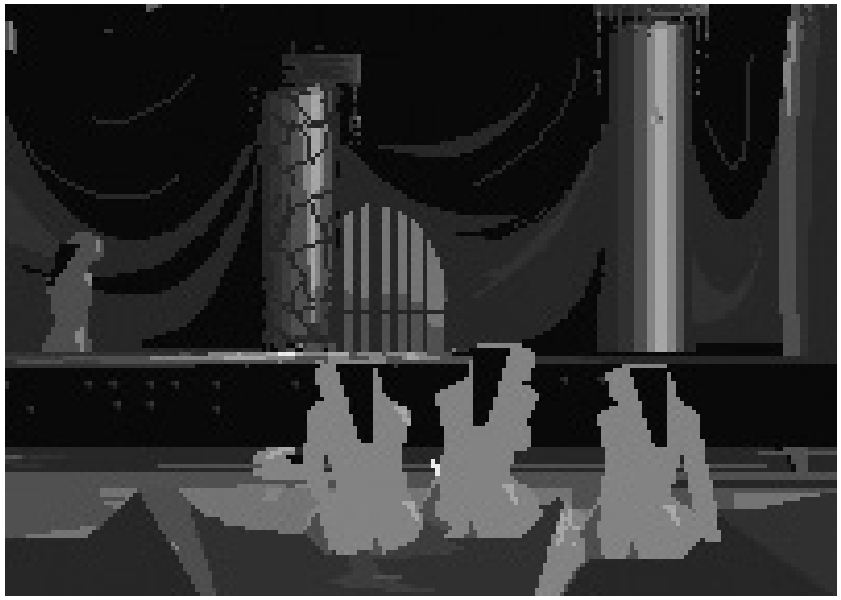

Figure 9.9
The offending alien bottoms in the French version of *Another World*.

Nudity has always been a problem for Nintendo of America. This is ironic because many Nintendo games in Japan are hypersexualized. For example, Nintendo's US version of *Final Fantasy VI* adds clothing to a female character's naked buttocks.[59] Nintendo's US censorship occurs even when the instances of nudity do not come close to anything sexual. For example, the French game *Another World* contained (unrealistic) depictions of naked aliens—no problem, in the Super Nintendo port, "the crack of the naked aliens' bottoms was reduced by 3 pixels . . ."[60]

In *Castlevania III: Dracula's Curse*, and in *Castlevania IV*, neoclassical statues are clothed.[61] Nintendo of America, in a sense, was ahead of its time. In 2002, US attorney general John Ashcroft, a sternly conservative man, ordered similar statues to be covered with drapes inside the Department of Justice.[62] In *Mother 2*, Nintendo of America put clothes on a character who had just entered a mental realm. There is nothing sexual here: according to a veteran Japanese to English videogame translator, "it's common for Japanese entertainment to strip characters of everything when they enter mental realms or weird dimensions as a way to indicate that they're in their rawest, purest, or most vulnerable form."[63]

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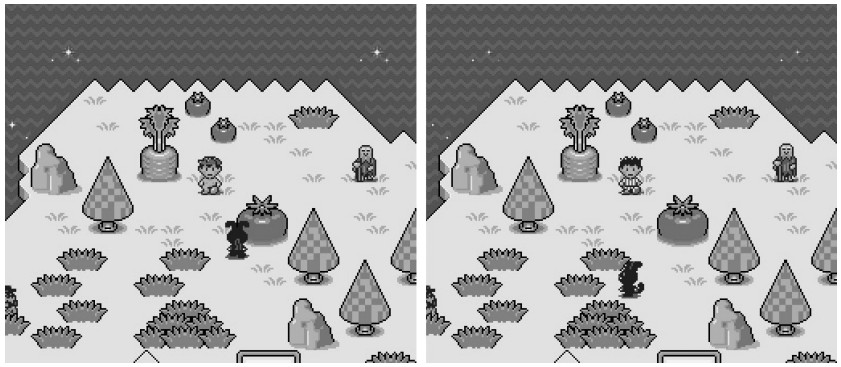

Figure 9.10
The character in the center is naked (save for a hat) in Japan, but clothed (without a hat) in the United States. Left: *Mother 2*, Japanese version. Right: US version.

Even sexual preferences get homogenized to fit 1990s mainstream. In Capcom's *Final Fight,* the first two bosses, Damn and Sodom, get renamed Trasher and Katana. And, an expert on Nintendo's sanitization practices notes, in Enix's *Dragon Warrior 2*, gay bars become "cafes" and gay characters are "heterosexualized."[64]

Nintendo of America is not fond of drugs and alcohol either. In Japan's *Super Mario Kart*, the character Bowser is seen pounding a bottle of champagne after he wins a race. US Bowser still has the bottle in hand, but does not drink it. In *Mother 2*, bars become cafes. In Tecmo's *Secret of the Stars*, "the original Japanese version has a town called 'Drunkards' that's full of alcohol-related stuff, including bars. For the localization, the town was renamed 'Sleepers' and everyone now relies on coffee to get through the day. Naturally, the bars are now coffee shops, complete with newly drawn signs. . . . In the Japanese version of *Final Fantasy Legend II*, one part of the story revolves around opium and opium smugglers. All of these opium references were replaced with bananas" in the English-language version, prompting one character to exclaim, "Bananas are going around secretly!"[65] Perhaps the most famous instance of alcohol cleansing is in Nintendo's *Punch Out!!* In the original, Japanese, version, one of the boxers, a Russian built like an oak, is named Vodka Drunkenski, and his tagline is "That vodka was some good shit!" (oddly, the bottle he brings to his lips reads "BEER"). In the US version, the character is renamed Soda Popinski and is seen drinking a bottle labeled "POP" (for non-American readers, "pop" is slang for soda).

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Figure 9.11
Japanese version of *Punch Out!!* featuring Vodka Drunkenski getting ready for his match drinking . . . beer . . . while exclaiming that "that vodka was some good shit!"

Figure 9.12
After going through Ellis Island, our Russian is now named Soda Popinski and drinks a soda "pop."

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Figure 9.13
Left: *Top Secret: The Resurrection of Hitler* (1988) on Nintendo Japan's Famicom. Right: *Bionic Commando* (1988) on the NES.

Finally, hate speech is another type of content that was sanitized by Nintendo. And not just actual hate speech, but any references to it, even when the narrative of the game actually has the player fight hate groups. In *Top Secret: The Resurrection of Hitler*, released by Capcom in Japan in 1988 for the Famicom, the main character must prevent Hitler from being resurrected by an evil character. When the game came to the NES as *Bionic Commando* (which was actually the original name of the arcade version), it was decontextualized through the change of characters names and the removal of swastikas.[66] The same happened when *Wolfenstein 3D* was ported from PC to the SNES.[67] One of the developers responsible for the port remembers "what a nightmare it was deal with Nintendo censors. We knew we would have to get rid of some of the Nazi paraphernalia due to the fact that they wanted to sell the game in Germany. . . . But the most notable thing was that we had German Shepherds in the original version of *Wolfenstein 3D* come ahead and bite you, and Nintendo's censors were totally like, 'You can't shoot dogs.' So we had to change them to rats."[68]

Here, Nintendo clearly double dips. On one hand, it avoids offending part of its customer base. At the same time, it ensures compliance of the game with large parts of the world's laws. The PAL version of the game, that is, the cartridges adapted to most of Europe's video-output standard, and the

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SECAM version (for France), were, in their great majority, conversions of the US version of the game.[69] Here, the mechanism is similar to the one used by Bethesda with *Fallout 3*. After it postponed the release of the game worldwide to sanitize the drug content to the satisfaction of Australian censors, the studio released the Australian version worldwide. There certainly are economies of scale at play here and simplifications in terms of development costs and logistics. Using the lowest common denominator, from a content-control-laws standpoint, also creates economies of scale in terms of compliance. It's entirely possible that the *Fallout 3* positive references to morphine would have triggered severe restrictions in, say, Germany, with its stern USK board. Likewise, although *Wolfenstein 3D* was outright banned in Germany, it was not in France—had there been Nazi swastikas displayed all over the game play, however, it is plausible that the French courts might have cracked down, as Yahoo! learned the hard way. This is why using the lowest common denominator of what is socially and/or legally acceptable and applying it to sanitize game releases on a global basis occurs. The type of nudity censored by Nintendo of America, the references to drugs and alcohol, the violence, the display of hate symbols—all are protected speech under the First Amendment to the US Constitution. These are removed by Nintendo of America as a marketing tool, to position the company as family friendly. At the same time, as Nintendo of America then exports its games to other parts of the world (Canada and Western Europe being the largest legal markets outside of Japan), the sanitization becomes a tool of rationalization of compliance efforts in a globalized market.

While this short case study of Nintendo's entangled marketing and legal strategy might sound like a laundry list, its importance for our broader story should not be understated, for three reasons.

First, it reveals the breadth of content prohibitions around the world, including within the Western world, and shows how laws that were passed in jurisdictions that are foreign to us very much impact our local experience as players, wherever we are located.

Second, it highlights the fact that, in many instances, it is lawyers, not game designers, who determine game features. In the case of Nintendo of America, the person who, for all intents and purposes, was at the helm of the ship starting in 1983 was a senior vice president named Howard Lincoln, who also happened to be the company's general counsel (chief legal officer).[70] Lincoln would be made chairman in 1994. So, when arbitrages had to

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be made, they were decided upon not by a game designer, not by a salesperson, not by a marketer, but by a lawyer.

Finally, Nintendo's legal strategy and its impact on gamers becomes particularly relevant in a world that is increasingly globalized and interdependent, and where the distribution of media content has shifted from brick and mortar to downloads and streaming. When exports of consoles and cartridges depended on boats and on the establishment of local physical distribution circuits, as in the days of the NES and the Super NES, game companies had a lot of control over what laws they would be subject to (gray market imports set aside). With online distribution, the legal game becomes much trickier because the potential for reception in a much broader variety of legal systems has increased exponentially. The role of lawyers in determining content strategies has never been more important.

Content control laws and rating systems are the most obvious regulations that impact what we can play. Many more legal forces are also involved, most of which are invisible to the eye of the non-lawyer but nonetheless have a real impact on gamers' affordances. In the remainder of this chapter, I have organized them into two broad categories: negotiation cultures, contractual practices, and local business laws are the first; trade barriers are the second.

Negotiation Cultures, Contractual Practices, and Local Business Laws

To get a sense of how different local legal cultures impact businesses, including in the videogame industry, one does not even need to turn to outside the United States. You will recall from chapter 7 how entrepreneurs, in the early days of Silicon Valley, benefited from a pastoral, non-litigious culture, which stood in stark contrast with the New York City practice. Atari benefited directly when, as inexperienced first-timers, they cut their first and only round of venture capital financing in 1975 with Sequoia Capital, Mayfield Fund, Time Life, and Boston Fidelity Ventures Associates, because the syndicate chose to be represented for the deal by the original gangster of all Silicon Valley law firms, Wilson Sonsini Goodrich & Rosati. Lon Allan, Atari's general counsel, recalls:

> Don Valentine was the lead VC so he was the one who was going to take the board seat, and he did the negotiation for the consortium of VCs, and he hired John Wilson of Wilson Sonsini. And besides being a good lawyer, John Wilson was a true gentleman because obviously he was in the position where if he wanted to sort of outfox me in the documentation, he was in a position to do so, and he didn't.[71]

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Lon Allan had a much different experience when Atari's founders and VCs sold to Warner a year later, and Warner came with the New York City law firm of Paul Weiss:

> The game in New York when you were negotiating financing deals was to see if you could fuck the other guys with the documents to stick something in there that they wouldn't notice. That has never been the practice here in Silicon Valley. . . . When we sold Atari to Warner, lawyers from Paul Weiss—outside lawyers from Warner—came out, and when we'd go out at lunch to get a sandwich, they would lock their briefcases because the New York practice was if they didn't, they were afraid people would come in and look at their deal notes. I never owned a briefcase with a lock on it because that wasn't the practice here.[72]

If, within the United States, coast-to-coast legal cultures differ so radically, imagine how much more salient the need for videogame industry lawyers to be culturally aware is in international practice. One key for lawyers who act as negotiators is to establish rapport with their counterparts. This is especially tricky to achieve when cultures are radically different. I asked Lon Allan about his experience with setting up Atari's operations in France: How was it taking "Silicon Valley culture with you in the early seventies and going to somewhere like France, which isn't very Silicon Valley in spirit?" Allan's first reaction was indeed to bring food and wine into the story:

> When we set it up, it was coin-op. I think it was 1974 that I flew to Paris. It was the coin-operated business, so the people we met, our partners there, Jean-Jacques Gaillard and Serge Lievoux, were pinball distributors. . . . And they courted Nolan [Bushnell]. So when we went over there, you know, he's a kid from Salt Lake City, I'm a kid from Detroit, and they're taking us to [famed restaurants] La Tour d'Argent, to Taillevent. [laughter] We're thirty years old. Not too hard to snow us and this is Paris, France.[73]

Awkwardness aside, differences in business cultures can lead to complicated situations when what is *expected* in one country is *illegal* in another. Such is the case of bribery of public officials. In several parts of Asia, including China and Taiwan, it has historically been a required part of conducting business to present counterparties (including government officials who can effectively prevent business from taking place), with financial "gifts." These are typically handed physically inside red envelopes. Resolving whether these are actual gifts, designed to foster a positive relationship, or actual bribes, is beyond the scope of this work, but red envelopes are generally considered bribes in the Western world. How to handle the red-envelope culture is a question that the videogame industry has faced since the 1970s.

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As Allan recalls when asked about business practices in Taiwan, where Atari set up shop to build the consumer products (*Pong* and then the VCS), "then, business practices there were—well, again, I was raised in Detroit, but a lot of them were Detroit-style where there was pressure on our purchasing agents."[74] There was a custom, Allan continues, "to give a tip, whether to the mailman or the water meter guy. The concept is called the 'red envelope.' If you didn't give the red envelope, which was literally a red envelope, the mail would be slow, or there'd be a power outage. Being a young lawyer, I checked with Warner in New York City, even though it was de minima, and I was told to deal with this myself. . . . I knew we weren't going to go to jail. If you were going to do business in Taiwan, it was expected for essential services, just like you'd be considered rude if you didn't tip in bars or restaurants nowadays."[75] The situation was made more complicated for US businesses after 1977 when the Foreign Corrupt Practices Act was passed.[76] Under this law, it is generally illegal for US persons to bribe foreign officials. As a result, aside of the moral aspects of the situation, videogame companies conducting business in many regions of the world are now constantly having to make legal risk-benefit calculus decisions. If they do not navigate these murky legal and cultural waters adequately, game production might not see the light of day.

Bribing aside, setting up shop and being successful on the long run involves mastering local *labor* laws and showing a healthy respect for labor practices. Early Atari, as it started its Taiwanese operation, was sensitive to this. As Lon Allan recalls,

> [Taiwan] had martial law. Of all the places in the Far East in terms of stability, with martial law, it means you don't have any labor problems—there was a full colonel assigned to us. So I went over there and we set up ATMC, Atari Taiwan Manufacturing Company. Obviously, in terms of setting up the subsidiary in Japan and in Taiwan and in France, in each case, I hired local counsel. So we set up a factory there. We bought the old TRW factory and renovated it, and that's where I learned about feng shui, because we had to move the gate, we had to move the entrance to the general manager's office—the doorway—because until the feng-shui man signed off, the workers wouldn't come to work. And by 1975, we had 3,500 employees. They were employees of this wholly owned Atari subsidiary in Taiwan, whereas in terms of our corporate headquarters here in Silicon Valley, we had maybe two hundred employees. Now in today's world, a lot of people would scream about outsourcing those jobs. But, in the early seventies, it was considered not only the smart thing to do, but, again, if you wanted to get professional money—VC money—it had to be in your plan. . . . And inside of two years, this company where we did a 1.4 million dollar VC financing, we were selling a billion dollars of videogames out

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> of Taiwan, when a billion dollars was a billion dollars. But it raised all sorts of questions, because international business back in the early, middle seventies was still getting off the ground. Again, Taiwan was under martial law. So the Taiwanese government assigned a full-bird colonel to be in charge of "employee relations." This was back when in the city of Taipei, you had armed guards, because of the threat of Mao Zedong unleashing his forces on Taiwan. But it worked. The workforce—very smart, very dedicated. Compared to wages here, this was a great deal financially for Atari. And for the people in Taiwan, because there still weren't that many American companies there, even though the young Democratic Socialists in this country today would say we were exploiting them, we were paying them. . . . I mean, people were lining up for jobs with ATMC.[77]

This story is indicative of how legal (and moral) considerations that are invisible to most drive the fate of videogame companies. Had Atari's lawyer not figured out how to comply with Taiwanese labor laws and practices, the venture capitalists might not have invested, and the company might well have gone under around 1975.

Global business such as the videogame industry has become much more integrated than it was in the mid-1970s. The need to understand and respect local legal cultures remains ever present. US videogame companies should be particularly sensitive to labor laws, because of the pressure they are known to put their employees under.

The game industry in North America is known to suffer "from continual battles surrounding issues of 'crunch' and 'Quality of Life.'" A 2012 study discussing "frustrations over work practices in the Los Angeles studios" of Electronic Arts noted, "The current mandatory hours are 9am to 10pm—seven days a week—with the occasional Saturday evening off for good behavior (at 6:30pm). This averages out to an eighty-five-hour work week. . . . EA's attitude toward this—which is actually a part of company policy, it now appears—has been (in an anonymous quotation that I've heard repeated by multiple managers), 'If they don't like it, they can work someplace else.' Put up or shut up and leave: this is the core of EA's Human Resources policy."[78] This type of practice does not fly everywhere. For example, it led to the collapse of Australian videogame studio Team Bondi. Founded in 2003 in Sidney, Team Bondi only ever released one game, *L.A. Noire*, in 2011. That same year, an independent journalist, who interviewed many of the studio's employees, broke the story of "perpetual crunch time" at the firm:

> "There was simply an expectation that you'd work overtime and weekends," said a source. "I was told that I was taking the piss by saying that I couldn't give every

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single one of my weekends away. We were looked at as a disposable resource, basically. If you weren't in the 'inner circle'"—an exclusive group which seems to have consisted of the former Team Soho employees—"you were just a resource to be burned through," he says. "Their attitude is: 'it's a privilege to work for us, and if you can't hack it, you should leave.'"

"If you left at 7:30pm, you'd get evil eyes," another artist recalls. "The crunch was ongoing. It just kept on shifting; an ominous crunch that just keeps moving, and moving. Management would say, 'Oh, it'll finish once we meet this deadline,' but the deadline kept moving. That went on for a good year." Of the three years that this artist spent at Team Bondi, he worked 60-hour weeks on average. To meet each development milestone—around one per month, he says—his workload would jump to between 80 and 110 hours per week, for a period of one to two weeks at a time.

"I left because of stress and working conditions, mainly. But the trigger was this: I received a reprimand for 'conduct and punctuality' for being 15 minutes late to work. I arrived at 9:15am—despite the fact I had only left work around 3:15am the same day, and paid for my own taxi home! I never would have thought you could put a sweat shop in the Sydney CBD."[79]

Following the investigative report, Rockstar Games, *L.A. Noire*'s publisher, parted ways with the studio: "Rockstar used to be very keen on making Team Bondi something like 'Rockstar Sydney'—the more they worked with Team Bondi management, the more they came to understand that this was a terrible idea."[80] Plagued with this reputation for unfair labor practices, and unable to find new employees or a new publisher as a result, Team Bondi went into receivership and its assets were eventually sold to Australian film studio KMM, with Rockstar Games retaining the *L.A. Noire* IP.[81]

US-style safety-net-lacking labor practices are frowned upon in many other locales, not the least of which is France. In the videogame field, one company that learned the hard way was Atari. Following the 1983 crash, the company was sold in pieces by Warner. On July 2, 1984, its home videogame and computer business was sold to Jack Tramiel, the founder of Commodore.[82] Tramiel's purchase included Atari's French operation.[83] The very next day, on July 3, amid the kickoff of radical restructuration (firings) in the United States,[84] a Tramiel lieutenant called Atari France's CEO, one Guy Millant, and asked him to fire fifty-nine of its sixty-five employees by the next morning.[85] A lawsuit ensued in labor courts, lost by Atari.[86] In the end, thirty employees lost their jobs, but another thirty-five were saved from the chopping block, more than half the number Tramiel had demanded be laid off.[87]

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In another post-crash instance, French labor laws not only saved jobs but also enabled the creation of new games that would otherwise not have seen the light of day. In 1983, Mattel, after having laid off a third of its workforce already, was looking at a $400 million loss for the year, even though its toy division, led by Barbie dolls and Masters of the Universe characters, had its best year ever and was profitable. Faced with bankruptcy, it had no choice but to divert its videogames operation. It did so in February 1984 by selling it to a group of investors for a mere $20 million in cash.[88] The investors were not interested in taking over Mattel's R&D lab in the "French Silicon Valley," the Mediterranean coastal city of Sophia Antipolis, where Mattel had been developing Intellivision games that would appeal specifically to a European audience.[89] French labor law precluded an immediate layoff of the twenty employees, and instead required a multimonth cooling-off period to enable local managers to look for a potential savior.[90] During that time, Mattel France employees, whose salaries, by law, continued to be paid, kept developing new games, in hopes of attracting an angel investor. These efforts paid off. In April 1984, a group of investors, led by local Mattel general manager Tim Scalan, took over the fledging operation and renamed it Nice Ideas. The company would go on to develop games such as *Championship Tennis*, *World Cup Soccer*, and *Burger Time* for console platforms such as the Intellivision (by then owned by INTV), the ColecoVision, and PC platforms such as Atari, Commodore, Amstrad, and Thomson.[91] In this case, labor laws actually contributed to the development of new games!

There are countless more examples of local business law that an outsider might consider to be arcane but that have real implications for the videogame landscape and gamers' experiences. One that stands out has to do with the requirement to *translate* products and/or user manuals into the local language (no, not everyone speaks English!). Such is the case, for example, in the Canadian province of Quebec, where videogame labels and manuals must be in both English and French,[92] and in France,[93] because both regions put great public policy emphasis on the protection of their local culture and languages from Anglo-Saxon forces. In at least one documented instance, involving Electronic Arts' *FIFA 15*, a French judge ordered the games removed from the shelves because the manual was in English only. The retailer, Maxxi Games, had imported the games from England for resale rather than distributing the EA-approved French market versions. EA sued the rogue retailer but had no

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hook under French commercial law. Only the language law enabled EA to get its own games removed from the shelves![94] The Ministry of Culture has also issued French-language guidelines (applicable to broadcasts, advertisements, and the like) to sanitize the gaming jargon from Anglicisms. "Cloud gaming" must now be referred to as "*jeu vidéo en nuage*", "e-sport" as "*jeu vidéo de compétition*," "in-game advertising (IGA)" as "*publicité dans le jeu*," "free-to-play (F2P)" as "*jeu vidéo en accès gratuit*," and so on. The 2022 list has nineteen entries.[95]

Advertising rules are also country-dependent and affect how videogames can be marketed. In France, Guy Millant had obtained a huge marketing budget from Ray Kassar to launch the Atari VCS. But he could not aggressively spend it on television ads because these were heavily restricted at the time. Millant, however, was connected. Before joining Atari, he was in charge of running the statistics for the French Open of tennis for TF1, the first public broadcasting channel. Through his connections, he managed to introduce the VCS on TF1 through product placement (which was then illegal and remains very controlled): he enrolled the Bogdanoff Brothers and their famed science show *Temps X* to produce entire journalistic segments on the rise of videogames, which, of course, included prominent references to the VCS.[96] This ability to work around laws gave Atari a definite competitive advantage.

Comparative advertising is another subfield in which legal and cultural differences are salient. While it is an authorized and commonplace practice in the United States, it is not in other parts of the world. In 1990, Michael Katz, the president of Sega of America, was tasked by his Japanese bosses to challenge Nintendo's dominance of the US market. He opted "to position the Genesis as a console for teenage boys, figuring that the children who grew up playing cheery and cute Nintendo games would want something more edgy now they were entering puberty. The Genesis would, he decided, be pitched as the console Nintendo owners 'graduated' to."[97] He came up with the slogan "Sega does what Nintendon't." What would become a cult tagline was at first rejected by headquarters: "The Japanese would never do competitive commercials," said Katz. "They thought they were in bad taste in terms of business ethics, but we convinced them that was what we needed since we were against Nintendo."[98] Of course, such tagline could only be used in markets where comparative advertising is legal, which is not the case in many European countries, where it was therefore not used.

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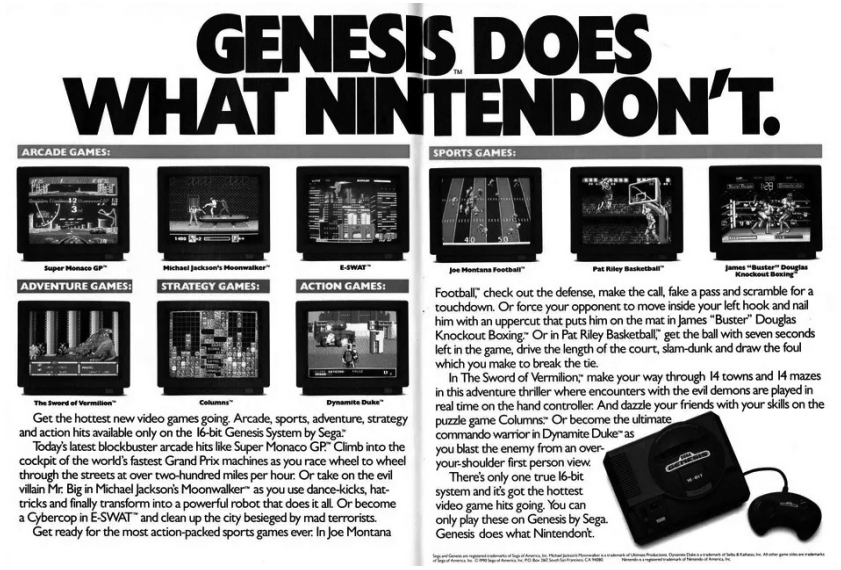
GENESIS DOES WHAT NINTENDON'T.
ARCADE GAMES:
Super Monaco GP™
Michael Jackson's Moonwalker™
E-SWAT™
ADVENTURE GAMES:
STRATEGY GAMES:
ACTION GAMES:
The Sword of Vermilion™
Columns™
Dynamite Duke™
Get the hottest new video games going. Arcade, sports, adventure, strategy and action hits available only on the 16-bit Genesis System by Sega.™
Today's latest blockbuster arcade hits like Super Monaco GP.™ Climb into the cockpit of the world's fastest Grand Prix machines as you race wheel to wheel through the streets at over two-hundred miles per hour. Or take on the evil villain Mr. Big in Michael Jackson's Moonwalker™ as you use dance-kicks, hat-tricks and finally transform into a powerful robot that does it all. Or become a Cybercop in E-SWAT™ and clean up the city besieged by mad terrorists.
Get ready for the most action-packed sports games ever. In Joe Montana
SPORTS GAMES:
Joe Montana Football™
Pat Riley Basketball™
James "Buster" Douglas Knockout Boxing™
Football," check out the defense, make the call, fake a pass and scramble for a touchdown. Or force your opponent to move inside your left hook and nail him with an uppercut that puts him on the mat in James "Buster" Douglas Knockout Boxing.™ Or in Pat Riley Basketball," get the ball with seven seconds left in the game, drive the length of the court, slam-dunk and draw the foul which you make to break the tie.
In The Sword of Vermilion," make your way through 14 towns and 14 mazes in this adventure thriller where encounters with the evil demons are played in real time on the hand controller. And dazzle your friends with your skills on the puzzle game Columns.™ Or become the ultimate commando warrior in Dynamite Duke™ as you blast the enemy from an over-your-shoulder first person view.
There's only one true 16-bit system and it's got the hottest video game hits going. You can only play these on Genesis by Sega. Genesis does what Nintendon't.

Figure 9.14
Sega comparative advertising for the US market, circa 1990, explicitly pitting the Genesis against its harsh rival Nintendo.

In all of the above examples, the hindrances to the seamless and unfettered global distribution of videogames are underpinned by the desire to preserve local specificities. The goal is not to prevent imports, but simply to make sure they follow local laws and practices. There are also many cases where countries purposefully hinder the inbound flow of videogames in order to protect their local industries. Through trade barriers, international politics and power struggles become embedded in the law.

Trade Barriers

Protectionist efforts drastically affect gamers' ability to access products. They take multiple forms, including taxes, tariffs, licenses, and quotas, the implementation of intellectual property regimes, and the manipulation of technical standards. This breakdown drives the structure of this last section.

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Taxes, Tariffs, Licenses, and Quotas

A fairly obvious legal technique through which international commerce is regulated is taxation. Such regulation can incentivize foreign investment, through various subsidies, tax breaks, and tax credits, or instead curb it. Because the videogame industry is part of both the tech and cultural sectors, many countries use taxation to favor the local establishment of global studios. This creates jobs and can also help with the development of "culturally appropriate," or at least relevant, content, as we've seen with the case of Mattel France in the previous section. Among the many countries that have used such techniques are Ireland (which also became a significant global tech hub in the days of the dot-com bubble), South Korea (another global tech hub), Singapore (also a prime international financial center), and various provinces of Canada.[99] In Quebec, for example, subsidies convinced Ubisoft to set up shop in 1997, leading to the development of what is now one of the largest development studios in the world, with more than 2,500 employees.[100] Taxation (which can take various forms and names, including tariffs and custom duties), can also be used to keep foreign competition out of the country. For example, when consoles were still legal in China, they were subject to a 130 percent import tax plus an extra 35 percent import tax for "preferable items," making it practically impossible for Chinese gamers to afford NES, SNES, Mega Drive, and the like.

The taxation technique can also be reinforced through the requirement of obtaining import licenses, setting up local partnerships, or through the imposition of quotas. For example, Blizzard Entertainment was not allowed to publish *World of Warcraft* (2004) in China until it partnered with a local distributor (this technique also enabled the Chinese government to first sanitize the content of game and make it comply with its ideology).[101] Many other countries, from Japan[102] to France,[103] have also mandated import licenses or imposed quotas to limit the inflow of foreign games, especially in the coin-op and early console days.

Trade restrictions through taxation, licenses, and quotas have an inverse corollary: smuggling and piracy. Smuggling of foreign goods can also be encouraged by a lack of formalized import structure or retail industry. Mexico provides an interesting case study in this respect. In the 1980s, a few coin-op ventures had local representation in the country (Nintendo, Sega, Capcom, and SNK), but not Atari. As far as consoles were concerned, Atari had teamed up with a Mexican meat packaging company that was exporting meat to the

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United States, to fill their empty trucks with Atari VCS on their way back to Mexico—but the machines were only sold through a department store that targeted high-net-worth customers, so the vast majority of relatively poor, rural Mexico was left out. Gamers turned to the time-honored tradition of buying smuggled imports (*fayucas*) in Mexican bazaars, such as the Bazar de Lomas Verdes and the Bazaar the Pericoapa.[104] The big winner of that gray market game in Mexico was the Nintendo Famicom, smuggled from Asia, even though the North American version, the NES, was sold legally starting in 1985. The Famicom "was sold alongside an electrical adapter for the NES and multigame cartridges. You could buy the Japanese console on gray markets such as Pericoapa or Lomas Verdes around the country, and this smuggled console was cheaper than the legal one, for it avoided import taxes. The retail price for the NES in Mexico was around USD $250, while the pirated version was USD $199."[105] Interestingly, this situation led to positive effects for Nintendo, because it created deep brand loyalty. According to local industry insiders, "in Mexico, piracy often works as a marketing device for companies." As a result, "the market penetration of Nintendo was unlike what anyone had ever seen in the videogame industry in Mexico, and even today, one can hear casual gamers refer to any game console generically as 'El Nintendo.'"[106]

This practice of working around official legal frameworks has had a long-lasting effect on the Mexican market:

> The situation would repeat for the PSX, the PS2, and the Xbox, since pirated CF-ROMs flooded the gray market. Many would buy a console while owning only a pair of legal games and dozens of illegal ones, and this created a very strong user base and market for the PS3 and the Xbox 360 when they were released. [The practice] makes certain products accessible to a segment of the public that otherwise would never buy them. Even if the people acquire the products illegally, they will still develop a deep sense of brand loyalty, and if possible, in the future, they will strive to become legitimate customers for their brand. . . . [As of 2015], many gamers have retired from buying pirated games, as is evident from the sales spike that the retail industry as seen in recent years; there are not only more gamers . . . but gamers are changing over from buying pirated copies of games to buying original copies.[107]

Here, an illegal practice primed the pump for a flourishing legal market. The same effect can be observed in many other countries.

In China, the extravagant tariffs precluded the local purchase of foreign consoles. As a result,

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> pirated consoles were made locally in China and met the market need. Amid the keen competition, the Xiaobawang outsold other competitors due to its low cost and relatively high quality. It soon occupied almost the entire Chinese console game market. To play games, users only needed a pirated console and a pirated cartridge containing exactly the same content, say, of an NES cartridge. Later in the market, the Tianjing-based company Xinxing promoted a series of games called Street Fighter, a pirated version of the worldwide game Street Fighter series from Capcom, and it soon become a market hit. As Street Fighter could be played on SEGA's MD platform (the 16-bit Mega Drive), a locally cloned console, the SEGA-based 5th Generation, was manufactured. This new, higher standard (16-bit) console was soon prevalent across the entire market and created a new wave of competition among local console manufacturers.[108]

Similar patterns were found in other developing countries, including Russia, South Africa, Poland, and Brazil.[109]

The trend of restricting official foreign imports through taxes, tariffs, licenses, and quotas, however, seems to be fading, at least as far as member-countries of the World Trade Organization are concerned, since the point of the WTO, which replaced the General Agreement on Tariffs and Trade (GATT) in 1995, is to promote free trade, in particular by eliminating barriers such as tariffs, quotas, or other discriminatory practices. But there are other, more subtle ways, through which a state can promote its domestic game production at the expense of imports, including designing protectionist intellectual property laws and imposing their own technical standards.

Protectionism Implemented through Intellectual Property Laws

Historically, many countries, especially developing ones, have refused to recognize the validity of foreign copyrights, or otherwise made it practically impossible to enforce them. We just mentioned the proliferation of console clones in China, caused by the imposition of high tariffs on official imports. China's notorious general disregard for foreign intellectual property rights catalyzed the cloning culture already primed by tariffs. As a local expert noted, "outraged by the public theft of its copyrights, SEGA took legal action, but in vain. Counterfeit videogames by Xiaobawang, Xinxing, and other pirating companies were still the local winners."[110]

Taiwan is another country where foreign copyrights were not officially recognized by the state until the late 2010s,[111] a country where Sega tried to actively combat piracy, through both legal and technical means. A visible consequence for gamers of Sega's efforts to fight Taiwan's piracy practices

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was the TMSS system, a chip embedded in the Genesis, which displayed the message "PRODUCED BY OR UNDER LICENSE FROM SEGA ENTERPRISES LTD" on the screen whenever a pirated cartridge was inserted. The point of this system was to enable Sega to sue pirates in Taiwan based on trademark laws (the illegal cartridge prompted the display of the Sega trademark), since Taiwan, at the time, while not recognizing foreign *copyrights*, did enforce *trademark* rights. Unfortunately for Sega, the display was also triggered by *legal* cartridges not produced by Sega, that is, original third-party games such as Accolade's, rather than pirated copies of Sega's own games. Sega could have installed its chip on consoles sold in Taiwan only, but it installed it on consoles sold worldwide. This triggered a complex lawsuit in the United States, which we discussed at length in chapter 6, leading a US judge to write, "It is regrettable that Sega is troubled by software pirates who manufacture counterfeit products in other areas of the world where adequate copyright remedies are not available."[112] The court went on to rule against Sega, however, because the TMSS system, although it was designed to combat software piracy in Taiwan, was an illegal practice under US trademark law when it was triggered by legally produced third-party games.

Why would a country not recognize foreign copyrights? Because, and perhaps even more than with tariffs, such policy disincentivizes foreign parties to enter the local market. If a developer from country A distributes its game directly in country B, it knows that clones will immediately be made in B and that it will have no legal recourse. Such a copyright policy also supports local industries that are based largely on the cloning of foreign intellectual property, as is the case in China, because local companies know they can steal foreign intellectual property with no fear of punishment. The non-enforcement policy can also be implemented in ways that encourage foreign developers to enter into profitable (for the target country) local partnerships. For example, in Iran, the copyright of foreign games is not locally enforceable *unless* the foreign owner enters into an official distribution arrangement with a local partner, in which case the local authority will "support the [foreign] company against the illegal distribution and selling of that game by unlicensed companies."[113]

Where this gets trickier from an international trade and law standpoint is that, oftentimes, clones are created not just for a local market, but also get exported to the country of the legal manufacturer. Customs departments around the Western world are always chasing knockoffs of luxury French

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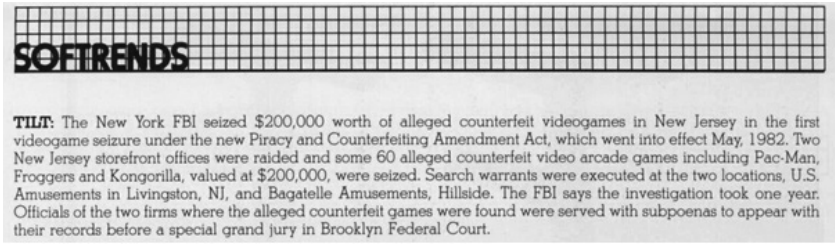

SOFTRENDS

TILT: The New York FBI seized $200,000 worth of alleged counterfeit videogames in New Jersey in the first videogame seizure under the new Piracy and Counterfeiting Amendment Act, which went into effect May, 1982. Two New Jersey storefront offices were raided and some 60 alleged counterfeit video arcade games including Pac-Man, Froggers and Kongorilla, valued at $200,000, were seized. Search warrants were executed at the two locations, U.S. Amusements in Livingston, NJ, and Bagatelle Amusements, Hillside. The FBI says the investigation took one year. Officials of the two firms where the alleged counterfeit games were found were served with subpoenas to appear with their records before a special grand jury in Brooklyn Federal Court.

Figure 9.15
Software Merchandising reports on $200,000 of counterfeit videogames (the equivalent of $600,000 in today's dollars) seized in New Jersey by the FBI, 1982. *Software Merchandising*, October 1982, p. 8.

brands such as Lacoste or Louis Vuitton, which are made in Asian countries where foreign IP is seldom protected, then exported to the West. The same is true in the videogame industry. In the eighties, coin-op industry publications such as *Vending Times* were full of advertisements warning US distributors not to purchase counterfeit IC boards from Asia, and of reports of customs busts at the border and FBI seizures within the United States (see chapter 4).

In June 1981, the Amusement Device Manufacturers Association (ADMA) hired a Chicago law firm to tackle the issue, and started seeking "new remedies afforded by the courts, such as impoundment of infringing machines, and remedies available through US Customs and the US International Trade Commission."[114] By July, "in an effort to knock copies of *Galaxian* out of the American market, Midway attorneys brought an action before the International Trade Commission and they registered the Midway copyright with the U.S. Customs Service. To attack *Cosmic Alien*, which Midway contends infringed its copyright in the *Galaxian* game, Midway brought suit against a Tokyo-based firm Universal Co. Ltd. and its San Francisco-based subsidiary. In a consent judgment, makers of *Cosmic Alien* were enjoined from selling copies of that game in the United States."[115] In November, an international conference in Tokyo sponsored by thirty-two major companies from the United States, Europe, and Japan addressed what was now a global problem calling for a global response. Further, a prominent attorney "suggested that a 3-pronged attack could be made by manufacturers against copiers in the US. He suggested that US Customs be encouraged to seize and detain copied games and circuit boards that were being imported; that exclusion orders directed against such products be obtained from the US Trade Commission;

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and that actions be filed in Federal Courts against individuals in various jurisdictions, while criminal proceedings might be instituted against willful copiers."[116]

Piracy issues were not unique to the US market and, even as far as arcades were concerned, lasted well into the 1990s. In France, for example, the market was flooded with pirate Asian IC boards, which could cost as little as 10 percent of the price of the original, prompting the leading trade magazine to write in 1988 that 99 percent of French arcade machines were stuffed with illegal boards.[117] That year, the Japanese and US trade groups hired a former FBI agent to work on their behalf with French customs and courts to curb illegal imports, and the local customs indeed started to increase their surveillance of shipping containers coming from South Korea and Hong Kong. Under pressure from Western countries, in the summer of 1989, Korea temporarily suspended the export of IC boards from its shores. In 1993, in the UK—where, producer Capcom claimed, 60 percent of *Street Fighter II* arcades were rigged with pirated boards—and in Italy, customs department also cracked down.[118] The game of cat and mouse lasted until the death of arcades.

International Industrial Politics and the Regulation of Technical Standards

The hardest part of designing *Home Pong*, Al Alcorn has explained, wasn't the chip. It was designing a casing that would ensure that the extremely strict Federal Communications Commission (FCC) standards on frequency emissions were met. As Alcorn put it, the FCC

> was a really, really, really big deal. Oh, the plastics. . . . And I thought the chip, that's high tech, we were done. Uh-uh. And so we managed to pull out of the fire the plastic case. The FCC was a real tough one because the FCC regulations in those days were so strict. They were really designed around the Magnavox Odyssey game, which is pretty much a kind of an analog game, and so it didn't emit these very high frequencies that high-speed digital electronics did. So it was very, very hard to do that. Sears was a big help in getting us to get it passed, get it approved. But I did a lot of extra engineering to make this thing meet those regulations at the time. It was very hard.[119]

Technical standards aren't there just to protect consumers. On the international stage for industrial dominance, the development of idiosyncratic local technical standards is another way through which states can favor their domestic industry over foreign players without running afoul of WTO's

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nondiscrimination principles. As every international traveler knows, for example, voltages and plug shapes are different in different regions. ISO, the International Organization for Standardization, with more than 160 member countries, harmonizes standards to enhance global flow of goods and services. But technical standards are political, because they drive entire industries and promote (or hinder) imports and exports. For this reason, and despite ISO's best efforts, not all standards get harmonized, with very real practical consequences for the populace, including in the world of videogames. For example, most computer chargers nowadays will handle both 110V and 220V and can therefore be used worldwide, as long as the user has the proper outlet-plug-shape adaptor. But that is not always the case, as I learned the hard way last time I visited Paris, France, from the United States. As it turns out, the standard-issue US charger for the Nintendo DS is only set for the US 110V standard and will not handle a 220V load, making my long flight back home most boring, since the DS battery had died while in France.

In addition to voltage, the export of videogame hardware and software is hindered by two main types of standards: electromagnetic radiations and emissions, and video output.

In the 1970s, France saw the rapid development of modern, *and French*, communication technologies, under the aggressive sponsorship of the state and as a reaction against industrial sovereignty threats from US and Asian giants. In 1977, the Direction of Electronics and Informatics Industries (DIELI), a French government agency, expressed its concern that 70 percent of videogame consoles in the world were made in Southeast Asia, notably in Hong Kong, Taiwan, and South Korea. The agency officially recommended that "imports be limited (something we weren't able to do with calculators, and, at first, watches),"[120] and a French industry in the field be supported. Rather than banning imports outright, however, the executive branch passed a decree mandating that all imported game consoles meet a specific French standard for radioelectric interference, called NFC9110, *and* be certified by the local standards board.[121] The decree was applicable a mere five days later. There was no question that the motivation behind the decree was not to prevent interference with television signals but to create a trade barrier. As a leading magazine noted sarcastically, "we were told that the high frequency of certain foreign products interferes with television programs in the neighborhood . . . [and that the new regulation] is an ecological measure. . . . The commercial

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ecology, in a way, is 'manufacture French!'"[122] The trade press was quick to note both that to obtain the certification was a "variable-speed" process (read, arbitrary) and that local importers of Southeast Asian consoles were going to suffer quite a burden in the name of national interest.[123]

Video output standards are another technical arena where states can flex their soft power. In the analog television era, three incompatible standards battled for world domination. NTSC, developed in the United States in 1953, was of poor quality and became known jokingly as standing for Never Twice the Same Colors. It was adopted in the United States, Canada, and Japan. Better in quality, PAL was finalized in Germany in 1963 and adopted in most of Europe; it is sometimes nicknamed Picture Always Lousy. Finally, at the other end of the quality spectrum is the SECAM standard, developed under the auspices of the French government and launched commercially in 1967. SECAM, also jokingly known as System Essentially Contrary to American Method, had two advantages: not being German, and shielding the French from foreign cultural influence by making it difficult for residents of border areas to receive shows broadcast from places like Spain, Italy, Belgium, Luxembourg, and Germany. More broadly, the development of the SECAM standard was part of the state's goal "to make science an instrument of French economic, military, and political objectives."[124]

A collateral casualty of this battle for domination of analog TV standards was the console industry. Each console must be designed and built to work with each standard, otherwise exports are useless because the console is not compatible to the TV set it hooks up to. This has created barriers to international trade, although not always insurmountable. When Guy Millant set up Atari France in early 1981, his first order of business was to convert the VCS to produce a SECAM-compatible output. Warner had to send an engineer to France for two or three months to figure out how to adapt the system, before returning to the United States and modifying the assembly process accordingly, just for the French market.[125] Ultimately, the French policy did create insurmountable barriers to entry for wannabe gray market importers of US consoles. Likewise, all consoles exported from the United States and Japan to the rest of the world (other than France, its former colonies, and the Eastern Bloc, which had adopted SECAM) had to be designed specifically to conform to the PAL standard. This situation also impacts global flows of game cartridges. For example, many French games that would have found a

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natural market in Quebec were never exported because the developers found it too costly to adapt the cartridges from the SECAM to the NTSC standard used in Canada.[126]

When Atari first set up shop in Taiwan in 1975, when Nintendo introduced the NES in the United States in 1985, and when *Wolfenstein 3D* was introduced in Germany in 1992, the international trade of videogames, on a large scale, did not happen by accident. Sure, there were exceptions. In the 1980s, *Tetris* spread like wildfire as shareware from Russia to the Western world, Mexican bazaars sold modified gray market imports of the Famicom, and mischievous teenage geeks in France ordered bootleg floppies for their PCs by mailing cash and stamped return envelopes to post office boxes in Switzerland. But, much like the contemporaneous online bulletin board services (BBS), these activities "had about them the whiff of a lonely nerd's hangout."[127] By and large, game companies and their lawyers were very much in charge of where their products would be released and could control their legal fate relatively easily. The advent of global online networks in the 1990s, of broadband wireline connections in the 2000s and 2010s, and of broadband cellular connections in the 2020s has been changing the game. Control over where games are being distributed (downloaded or streamed from) is largely illusory thanks to virtual private networks (VPNs). Gamers in China, for example, can easily bypass their country's Great Firewall to join tens of millions of worldwide users on online streaming platforms. Meanwhile, the world is more interdependent than ever, a trend that is likely to continue. And the global videogame industry keeps growing. Most of the legal issues and tensions we've encountered in this chapter, from the need to protect local culture while fostering international trade, to concerns relating to gambling (think e-sports), were just an appetizer to what might be. In this context, the relevance of internationally trained lawyers in the industry will continue to increase, and so will their silent impact.

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10 The Concluding Lawyer's Corner: Frenemies

Through the course of the stories narrated in this book, we've encountered multiple characters. They interacted with each other in specific legal, business, location, and time contexts. Each chapter was designed as a standalone vignette. It's essential, as we wrap things, to understand that the behavior of these actors is not constant through time. Changes in the business and the legal landscapes, as well as personal circumstances, make people and their strategies evolve. Former enemies become partners, then enemies, then partners again. Perhaps more surprisingly, sometimes, industry actors are both partners and enemies *at the same time*. *Frenemies*. This concluding chapter presents a few examples that help grasp the fluidity of the business-legal dance in the videogame industry and beyond.

Creative and business actors move around constantly, often starting ventures that compete with their previous organizations, sometimes coming back to their first love, sometimes forging ad hoc alliances, and oftentimes battling those relationships on the legal field. The *Atari-Activision* dispute was our detailed look at this process, but it was only the tip of the iceberg. The chart in figure 10.1 illustrates this process by mapping "the expanding universe of videogames," from the "big bang" caused by Atari in 1972 to the December 1982 days before the crash.

According to its author's description,

> the size of each asteroid corresponds roughly to the size of its company. Overlapping or touching asteroids represent subsidiaries or joint endeavors; for examples, Atari is a multibillion dollar subsidiary of Warner Communications and Midway worked with Disney to produce a game based on the movie Tron. . . . Spaceship trails show the person's movement from company to company. For example, one ship flying from Atari to Activision and back to Atari represents designed Larry Kaplan; flying from Atari to the edge of the screen but turning back is designer

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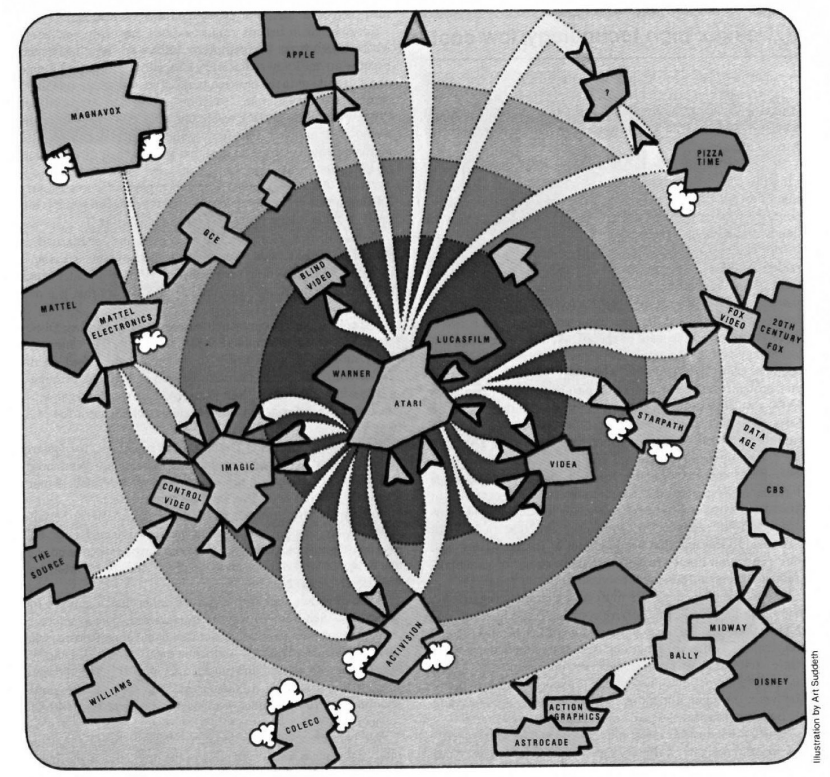

Figure 10.1
Videogames: The Electronic Big Bang, December 1982. Perry, Truxal, and Wallich, "Videogames," 21. Illustration by Art Suddeth.

Allan Alcorn. The tendency of spaceships and their cargo of ideas to shuttle from asteroid to asteroid has displeased many an asteroidal satrap, leading to the barrage of lawsuits and accusations represented here by puffs of smoke. The asteroid marked with a "?" represents the company that Joe Keenan, Nolan Bushnell, and Mr. Alcorn, three of the founding figures of Atari, intend to form when their contract not to compete with their former company expires in October 1983.

Most of the interactions described in this chart were enabled by the fact that non-compete clauses in labor contracts are generally not enforceable in the State of California, where the videogame industry emerged. But sometimes they are. And what happens next is a question of personality. For example, Bushnell and Alcorn's clauses were enforceable, but both got tired of staying at the beach while the rest of the boys were having fun. "And

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what were they gonna do to us anyways?!?!," Alcorn exclaimed when I met him the first time, "We were the founders of Atari!!!!!!!"[1] Bushnell decided to test that premise. In a move that remains to be explored thoroughly by historians, before his beach clause expired, he announced having purchased a new coin-op company, Videa (later known as Sente).[2] This landed him a lawsuit by Atari-Warner, followed by a settlement through which Bushnell licensed the home rights of Videa-Sente's next games to Atari.[3]

Looking at the dance from the bird's-eye view that is now ours, we can see three patterns emerge. First, individuals and companies often sue each other before working together. Second, the reverse is also true: collaborations sometimes turn into death fights. Third, love affairs and in-court feuds occasionally happen in parallel.

Lawsuits followed by love affairs or, at least, marriages of convenience, happen all the time in business, and we have observed this throughout the book, as it affected the gamer's experience in the home. Think about Warner-Atari and Activision. We left our protagonists in 1981, when they settled a Warner-Atari–initiated lawsuit designed to shut down not just Activision but the emerging third-party game developer industry as a whole. Well, not only did they make up, too, but they took their romance once step further by forming a joint venture ("JV"), which is an integrated structure with shared ownership, governance, profits, and risks. Not quite a marriage, but definitely a civil union. Announced in December 1983, the JV focused on technology for downloading videogames from an Atari VCS: "An unspecified type of broadcast technology, but closely related to FM radio, would be used to transmit the games to a home receiver that would plug into" the VCS.[4] This disruptive project materialized in the spring of 1984 as a corporation, Electronic Publishing Systems, Inc., having for shareholders Atari Electronic Distribution, Inc., and Activision Electronic Distribution, Inc.[5] It was advertised through a funny television commercial as "The Electronic Pipeline from Atari and Activision."[6] Jim Levy, the founding CEO of Activision, had previously had harsh words against Warner-Atari and its lawyers. Understandably so, since Warner-Atari wasn't just chasing some damages but attempting to nip Activision in the bud. By 1984, Levy was all sugar and honey. Asked by an Atari magazine reporter if "Atari owners have a friend in Activision," Levy answered, "You always have had, you know. That's what I try to tell our friends at Atari who were a bit upset when Activision was founded. I think they've gotten over it. As you know, we're

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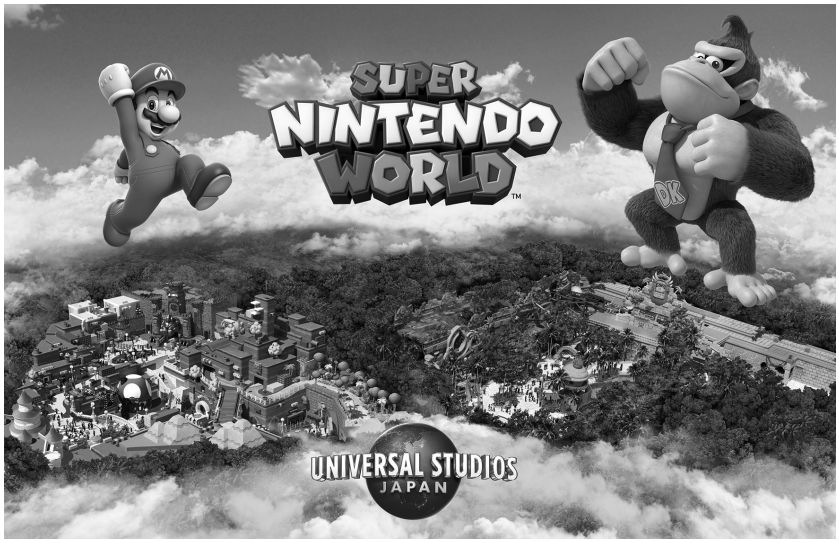

Figure 10.2
Nintendo announces a new Donkey-Kong-themed area at Japan's Super Nintendo World. "Super Nintendo World Expansion World's First* Donkey Kong Themed Area Set to Open In 2024," Press Release, Nintendo Co., Ltd., September 28, 2021.

even in a joint venture with Atari now, so I think that the storm clouds have dissipated. . . . We are great fans of Atari's future. We want to see them succeed. . . . We want them to sell millions of computers because we like to create for their machines. . . . I have a lot of respect for Jim Morgan [who was hired by Warner CEO Steve Ross to replace Ray Kassar]."[7]

Fun and practical results for the gamer are also sometimes visible outside of the home. You will recall that, in 1984, Universal Studios sued (and lost to) Nintendo over the character Donkey Kong, which Universal claimed infringed on its King Kong trademark. Well, they made up. In 2001, both parties announced that the Super Nintendo World park at Universal Studios Japan would be expanded in 2024 to include a new area themed after Donkey Kong![8] All's well that ends well for the young and the young-at-heart.

In contrast, love affairs sometimes turn into fights to the death, and Atari wouldn't always receive such love from a former counterparty as it did from Activision. The entity that split from Warner, Atari Games, and their subsidiary Tengen, had started its relationship with Nintendo on a collaborative basis. In December 1987, Atari-Tengen became an official

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Nintendo licensee to produce five games a year for the NES.[9] Atari-Tengen even came to Nintendo Japan's rescue in the summer of 1988, after Nintendo got squeezed out of the console rights for *Tetris* it thought it had legitimately acquired for the Japanese market. Atari, which had, in parallel, secured the worldwide console rights, would subsequently sublicense them to Nintendo for its Famicom (the Japanese precursor to the NES), saving the Japanese firm's day.

But although they often, at the time, started in an arcade, summer flings don't mean a thing. Atari-Tengen drew first blood that winter of 1988 by breaking its NES licensing deal with Nintendo. Now in the same position vis-à-vis Nintendo that Activision had been toward Atari a few years prior, Atari-Tengen decided to start producing unlicensed cartridges for the NES. This, of course, threatened Nintendo's business model as well as its marketing strategy as a family friendly, gated community (recall how unlicensed pornographic games had hurt Atari's goodwill). To add insult to injury, Atari-Tengen sued Nintendo for unfair competition and violations of the Sherman Antitrust Act, "based upon alleged monopolization and attempted monopolization of the markets for home videogame machines and home videogames and game cartridges playable on the Nintendo Entertainment System."[10] One commentator noted that "the Tetris rights were about to be tossed like the mother of all live grenades into the greatest war the American videogame industry had ever known."[11] But this battle was much more than just a lawsuit. It was a fight for total destruction, which turned into Nintendo's favor. As a cherry on the Nintendo cake, that March of 1989, in another twist of events, Nintendo managed to secure the worldwide Tetris console rights directly from the USSR government (the game had originated in a Soviet lab)—this is a story for another book. For our story, it was now Atari-Tengen being squeezed out of the rights it had acquired in Tetris. When Atari-Tengen had been kind enough to sublicense the rights (when it had them) to Nintendo Japan, Nintendo did not return the favor, and made sure through aggressive litigation that Atari-Tengen would never be able to publish Tetris. The business principles taught in universities around the world, about letting your opponent save face to leave the door open for further business, did not apply here. Let's give Howard Lincoln, Nintendo of America's VP and general counsel, the last word, on his feelings after beating Atari-Tengen in Judge Fern Smith's San Francisco courtroom over the Tetris rights: "On the plane back to Seattle, every time I looked at

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[Nintendo president] Minoru Arakawa, we would laugh because we knew we had . . . found a way to really give it back to Atari Games. [smiles] . . . The people at [Atari-Tengen] were simply incompetent, they didn't do their homework, they didn't do what they should have done, and, far from taking advantage of them, it was simply competent people taking advantage of some incompetent businessmen."[12]

Such public ad hominem attacks tend to happen when business gets personal. Indeed, Minoru Arakawa is said to have taken as a personal affront the decision of Atari-Tengen's president Hideyuki Nakajima to break Nintendo's lock-out chip and start producing games outside of Nintendo's official environment.[13] This is reminiscent of Atari's behavior toward National Semiconductor, after National almost put start-up Atari out of business by releasing a knockoff of *Home Pong* in early 1975, before Atari even released its own version. Atari started by blacklisting National from its list of suppliers: "By this time, after National almost killed us with cutting us off, we didn't buy anything from National. They were verboten."[14] What's more, in the words of Alcorn, as Atari became successful with the VCS, "National's head engineer said: 'I wanna work for you guys,' so we hired the cream of the crop of their consumer engineering department. Even more ironic, they said: 'we'll sell you our consumer division,' and we said: 'you screwed us so we're not buying the remains of the division that fucked us.' It was delicious revenge!"[15]

Sometimes, companies will work hand in hand on certain projects while *concomitantly* suing each other! In 1976, former foes Magnavox and Atari settled their dispute and became de facto business partners: Atari acknowledged the validity of Magnavox's patent, and Magnavox would in turn aggressively sue Atari's competition. In 1982, for example, Magnavox crushed Mattel in court, which was a great victory for Atari because it significantly raised barriers to entry for competitors of the VCS, and it was in the process of crushing Activision, on behalf of Atari, after Atari had failed to do so themselves. That very same year, however, Atari sued Magnavox (now North American Philips), over *K.C. Munchkin!*, a clone of *Pac-Man* (to which Atari had the rights), which Magnavox had developed for the Odyssey 2, a competitor of the VCS. The judge ruled that "the substantial appropriation of the PAC-MAN characters" required a ruling of copyright infringement in this case, and Atari won.[16] *Pac-Man v. K.C. Munchkin* became a landmark

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case because it was one of the first times a court ruled that the visual aspects of a videogame could be subject to copyright protection. Meanwhile, as if nothing was happening, Atari and Magnavox continued their partnership business of suing their competitors for patent infringement, with Magnavox the plaintiff and Atari the willing witness. As the saying goes, money makes anything possible. As a result, in the videogame industry, as in any cutthroat industry, parties not only alternate violent stances and business lovemaking, but often conduct both in parallel.

Even more baffling is that this frenemies dynamics at times occurs not just between businesses, but between businesses and their lawyers. Here, the boundaries of ethics are pushed, and seem influenced by the culture in which these relationships happen.

As you will recall, in 1972, an associate at the firm of Flehr Hohbach Test Albritton & Herbert registered a patent on behalf of Atari's Nolan Bushnell. The partner in charge, Tom Herbert, whose name appears on the firm's marquee, continued to represent Atari for years. In 1976, Atari acknowledged the validity of Magnavox's *'507* patent in a settlement signed by Herbert himself.[17] In March 1981, Magnavox reached out to Activision and attempted to extract licensing fees from the software company, indicating that Activision was infringing on the *'507* patent. Activision's lawyers replied that even if the games were of the types covered by the patent, there was no infringement, since the Activision games were designed to work in combination with the Atari VCS, itself already licensed by Magnavox under the 1976 settlement.[18] To which Magnavox replied that the license to Atari did not cover third-party cartridges, even when used with the licensed VCS console, since "the license to Atari only inures to game combinations sold by Atari."[19] Tom Herbert, and his firm Flehr Hohbach Test Albritton & Herbert, were still representing Atari at the time.[20] But another partner of the firm, Aldo Test, had been representing Activision since before the company was even incorporated and was now seeking to invalidate Magnavox's patent. Remember that the venture capitalists who were looking into possibly funding Activision, "called in their own intellectual property counsel, a gentlemen (sic) by the name of Al Test, to advise them on whether he felt it was appropriate for them to make an investment here and what the implications or risks might be." According to Jim Levy, the investors told him that Aldo Test "told them that [Atari-Warner] would undoubtedly sue us at

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some point, but, if it was his money, he would invest in the venture."[21] Aldo Test also registered Activision's trademark for the game *Dragster*, which Atari sued Activision over.[22]

What we have here is one firm's partner representing a plaintiff (Atari), and another partner of the same firm telling the defendant (Activision) not to worry about the suit, and that if it were his money, he would invest it in the defendant's business.

When Magnavox sued Activision for infringement of its patent, for the benefit of Atari, Charles ("Skip") Paul, Atari's general counsel, took the stand. If the Magnavox *'507* patent was to be invalidated pursuant to the court demands of Activision, represented by Aldo Test, that result would "be against [Atari's] best interests,"[23] he testified. Atari, therefore, did not agree to the Flehr Hohbach law firm representation of Activision. Magnavox, concerned like Atari that Al Test and Activision would mine Flehr Hohbach's files acquired during the representation of Atari, filed a motion to disqualify both Test and Flehr Hohbach as a whole. The US District Court for the Northern District of California denied the motion. Neither Test nor Flehr Hohbach as a whole would be disqualified.

This situation, which seems shocking, is enlightening insofar as understanding the practice of law in Silicon Valley. That practice appears to be an extension of local business practices and has a strong impact on the videogame industry. To reject the disqualification motion, the court used three main arguments. First, although a "substantial relationship" was found to exist "between the subject matter of the Flehr firms' past representation of Atari . . . and the subject matter of the Flehr firm's present representation of Activision," the "Court finds that Activision's interest is not in fact at odds with Atari's present interest, because Atari's present interest would be better served if the [Magnavox] patents at issue are declared invalid." This finding was directly at odds with Atari's general counsel assessment of Atari's own interest, but the court explained that it "is unpersuaded by" that statement. Second, the court, citing California case law, found that the rule prohibiting an attorney from "represent[ing] conflicting interests" meant that a law firm would be disqualified only if it "presently" represented both of the conflicting interests. The court acknowledged that at the time the lawsuit was filed, the Flehr firm was still representing Atari, but it found that these matters were minor and, since 1978, "wholly unrelated" to the patents at stake.

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The California courts use an approach that brings much more freedom to law firms to represent various parties that at times may sue each other. This is important because we have observed throughout the book that, because of the unenforceability of non-competes in California, entrepreneurs are constantly switching firms, suing each other, making friends again, and so on. Add to this the wide availability of venture capital, thanks to which new competitors are constantly being created, and the small size of Silicon Valley, if a law firm was forever prohibited from representing a competitor of company A, whom it represented at some point even for a small matter, then that firm would not be able to get much business other than from company A. Here lies the crux of the court's decision to refuse to disqualify Aldo Test and Flehr Hohbach.

The 1976 settlement between Atari and Magnavox included Flehr Hohbach as a party and had been signed as such by Tom Herbert. Under that settlement, so long as the license between Magnavox was in effect and the *'507* patent valid, "Atari *or its counsel* will not actively participate in any litigation relating" to the *'507* patent, "and will not aid any person . . . accused of infringment (sic) of said patent." What that clause, agreed upon by Atari's counsel Flehr Hohbach, was prohibiting, was exactly what Flehr Hohbach was doing, in its defense of Activision. To deny the motion for disqualification, the court simply found that this clause was "clearly invalid and unenforceable . . . because it restrains a law firm from engaging in a lawful profession." To substantiate its argument, it noted that Magnavox had entered into settlements similar to the Atari one with "dozens of its competitors," and that these regularly included provisions "purporting to preclude both the sub-licensee and its counsel from challenging the validity" of the patents. The court then referred to the provision of the California Business and Professional Code and to the case law applicable to non-competes in general.[24] "The important public policy considerations . . . which justify the general statutory bar to non-compete agreements in California are particularly affronted where, as here, two videogame companies attempt to buy out 'dozens' of patent law firms by persuading their clients to settle."

As summed up by a Silicon Valley legal insider, "'Larry Sonsini is able to work through what historically would have been very difficult conflict of interest issues.' . . . As the industrial community has grown, these conflict-of-interest 'innovations' have enhanced the ability of local firms to

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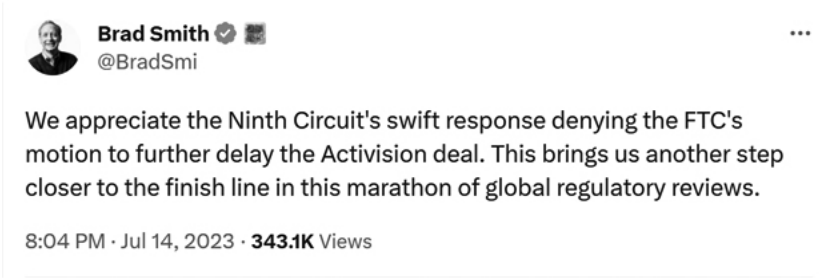
Brad Smith
@BradSmi
We appreciate the Ninth Circuit's swift response denying the FTC's motion to further delay the Activision deal. This brings us another step closer to the finish line in this marathon of global regulatory reviews.
8:04 PM · Jul 14, 2023 · 343.1K Views

Figure 10.3
Microsoft's President Brad Smith tweets about the Microsoft-Activision deal. Brad Smith (@BradSmi), Twitter, July 14, 2023.

preserve the multiple contacts that facilitate dealmaking and counseling."[25] The trade-off is as follows: the videogame industry, in Silicon Valley, has been able to grow through tremendous innovation fueled by tremendous competition, but it means, at times, having to accept that its lawyers play by the same rules, even when it leads to unpleasant situations and what many lawyers outside of Silicon Valley would deem to be real conflicts of interest.[26]

As we saw earlier in this chapter, Atari and Activision made up in 1983 through a new joint venture, at the very same moment Atari was trying to disqualify their mutual law firm from representing Activision in a lawsuit that opposed Magnavox and Atari to Activision. Both Atari and Activision have since gone through many failures and reorganizations, but their names survive, and their successors are still (currently) friends. In 2005, they signed an agreement under which Activision licensed *Pitfall*, one of the games designed by Atari defector David Crane in 1982, for Atari's retrogaming consoles.[27] The situation may change, of course: as of press time, Microsoft, a competitor of Atari on the console market, was attempting to take control of Activision, prompting an ongoing antitrust lawsuit, in part because regulators around the world are concerned that Activision might stop making games compatible with consoles that compete with Microsoft's.[28]

In July 2023, upon hearing of a favorable ruling on the matter by a District Judge in San Francisco, in a tentacular case spanning many countries, Microsoft's president and vice chair, himself a lawyer, underscored that this was part of a "marathon of global regulatory reviews."[29] Indeed it is.

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The E.U. regulator had already looked into the deal and had cleared it that May. As of the date of Smith's tweet, the U.K. regulator was still trying to block the deal. It finally cleared it in October 2023, after significant concessions from Microsoft and a restructuring of the proposed merged business. But as most everyone thought the deal was finally going to close, in December 2023, the US Federal Trade Commission appealed the District Court's ruling in favor of Microsoft before the Ninth Circuit, trying one more time to derail the deal.[30] In the end, the game never ends.

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Notes

Chapter 1

1. See, for example, "Atari Is Blocked from Selling Game," *New York Times*, June 22, 1989, D4.

2. Raiford Guins, "New . . . Now? Or, Why a Design History of Atari's Coin-Op Machines," Special Themed Issue, "New Videogame History," *American Journal of Play* 9, no. 4 (2017): 23, 42–43, 45.

3. Raiford Guins, "New . . . Now?," 30.

4. See generally Renate Mayntz and Thomas Hughes, eds., *The Development of Large Technical Systems* (Frankfurt am Main: Campus Verlag, 1988); Wiebe E. Bijker, Thomas P. Hughes, and Trevor J. Pinch, eds., *The Social Construction of Technological Systems: New Directions in the Sociology and History of Technology* (Cambridge, MA: MIT Press, 1987); Bruno Latour, *Aramis, or the Love of Technology* (Cambridge, MA: Harvard University Press, 1996).

5. Thomas P. Hughes, "The Evolution of Large Technological Systems," in *The Development of Large Technical Systems*, ed. Renate Mayntz and Thomas Hughes (Frankfurt am Main: Campus Verlag, 1988), 45

6. Raiford Guins, "New . . . Now?," 36; Raiford Guins, *Atari Design: Impressions on Coin-Operated Videogame Machines* (Camden, UK: Bloomsbury, 2020).

7. Two noted pieces have focused on the role of legal infrastructures and cultures in the Silicon Valley ecosystem: Ronald J. Gilson, "The Legal Infrastructure of High Technology Industrial Districts: Silicon Valley, Route 128, and Covenants Not to Compete," *New York University Law Review* 74, no. 3 (June 1999): 575–629; and Mark Suchman, "Dealmakers and Counselors: Law Firms as Intermediaries in the Development of Silicon Valley," in *Understanding Silicon Valley: The Anatomy of an Entrepreneurial Region*, ed. Martin Kenney (Stanford, CA: Stanford University Press, 2000). Other notable pieces that focus on broadening the scope of history by including business cultures in general, and other corporate-like actors such as venture capitalists in particular, include

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Leslie Berlin, *Troublemakers: Silicon Valley's Coming of Age* (New York: Simon & Schuster, 2017); Walter Isaacson, *The Innovators* (New York: Simon & Schuster, 2014); Martin Kenney, ed., *Understanding Silicon Valley: The Anatomy of an Entrepreneurial Region* (Stanford, CA: Stanford University Press, 2000); AnnaLee Saxenian, *Regional Advantage: Culture and Competition in Silicon Valley and Route 128* (Cambridge, MA: Harvard University Press, 1994). See also Tom Wolfe, "Two Young Men Who Went West," *Hooking Up* (London: Picador, 2000), 17–65; and the work of dot-com chronicler Po Bronson, *The Nudist on the Late Shift* (New York, NY: Random House,1999), giving a prominent space to entrepreneurs, angel investors, and venture capitalists.

8. Ed Edmonds and Frank G. Houdek, *Baseball Meets the Law* (Jefferson, NC: McFarland & Company, 2017), 1.

9. Edmonds and Houdek, *Baseball*, 2.

10. Gerardo Con Diaz, *Software Rights* (New Haven, CT: Yale University Press, 2019).

11. Siva Vaidhyanathan, *Copyrights and Copywrongs* (New York: New York University Press, 2001).

12. Lawrence Lessig, *Code and Other Laws of Cyberspace* (New York: Basic Books, 1999).

13. Julien Mailland & Kevin Driscoll, *Minitel: Welcome to the Internet* (MIT Press, 2017); Julien Mailland, "Freedom of Speech, the Internet, and the Costs of Control: The French Example," *New York University Journal of International Law & Politics*, vol. 33 (2001).

14. See, for example, Jon Festinger, Chris Metcalfe, and Roch Ripley, *Videogame Law*, 2nd ed. (Markham, ON: LexisNexis Canda, 2012), as well as a number of very technical law journal articles that discuss particular cases, cited in footnotes throughout the book.

15. One exception is Ron Gard and Elizabeth Townsend Gard, *Videogames and the Law* (Abingdon, UK: Routledge, 2017).

16. See, for example, Jas Purewal, "Intellectual Property," in Henry Lowood and Raiford Guins, eds., *Debugging Game History* (Cambridge, MA: MIT Press, 2016); Yochai Benkler, "There Is No Spoon," in *The State of Play: Law, Games, and Virtual Worlds*, ed. Jack M. Balkin and Beth Simone Noveck (New York: New York University Press, 2006).

17. On the destruction of judicial records by the National Archives and Records Administration, see William Ford, "Copy Game for High Score: The First Videogame Lawsuit," 20 *Journal of Intellectual Property Law* 1 (2012).

18. Scott Stilphen, "The Great Market Crash," *Atari Compendium*, undated, last visited January 30, 2023, https://www.ataricompendium.com/archives/articles/crash/crash.html.

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19. Scott Stilphen, "Michael Albaugh interview," *Atari Compendium*, 2017, https://www.ataricompendium.com/archives/interviews/michael_albaugh/interview_michael_albaugh.html.

20. *AtariAge*, https://atariage.com/.

21. Michael Current, *Atari History Timelines* (2008–2022), https://mcurrent.name/atarihistory/.

22. *Atari Compendium*, https://www.ataricompendium.com/archives/archives.html.

23. *Gaming History*, https://www.arcade-history.com/.

24. International Arcade Museum and Killer List of Videogames at the Museum of the Game, https://www.arcade-museum.com/.

25. *The Golden Age Arcade Historian*, http://allincolorforaquarter.blogspot.com/.

26. *The Digital Antiquarian*, https://www.filfre.net/.

27. *Benj Edwards Presents Vintage Computing and Gaming*, http://www.vintagecomputing.com/.

28. *MobyGames*, https://www.mobygames.com/.

29. One volume that blazes the trail toward this direction is Gard and Townsend Gard's *Videogames and the Law*. Also note the chapter on games in Greg Lastowka, *Virtual Justice: The New Laws of Online Worlds* (New Haven, CT: Yale University Press, 2010).

30. See generally Anthony Walsh, and Craig Hemmes, *Law, Justice, and Society: A Sociolegal Introduction*, 2nd ed. (Oxford: Oxford University Press, 2011), 87–95.

Chapter 2

1. Robert Wieder, "A Fistful of Quarters: In Which We Meet the Mad Scientist and All Those Furry Freaks Who Brought You Pong," *Oui*, September 1974, pp. 59–62, 124–129, at 61.

2. Julien Mailland, "'Nolan, with Respect, This Is Really Lousy Pizza': Conversations with Lon Allan, Original General Counsel for Atari and Pizza Time Theatre / Chuck E. Cheese," *ROMchip*, July 2020, https://romchip.org/index.php/romchip-journal/article/view/106.

3. Howard Scott Warshaw, designer of Atari Yars' Revenge, Raiders of the Lost Ark, and E.T. the Extra-Terrestrial, interviewed in *Wired* magazine, *The Making of the "Atari: Game Over" Documentary with Zak Penn* (documentary film, November 18, 2014), https://www.wired.com/2014/11/atari-game-over-documentary/.

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4. I use the slang acceptation of the word, which means "old school."

5. See, for example, Henry Lowood, "Videogames in Computer Space: The Complex History of Pong," *IEEE Annals of the History of Computing* 31, no 3 (August 2009): 5–19, at 8: "The first big wave of Silicon Valley start-ups crested between 1967 and 1969, with the founding of National Semiconductor, Intel, Advanced Micro Devices, and many more companies."

6. Henry Lowood, "Oral History of Al Alcorn," *Computer History Museum*, April 26, 2008, lot number X4596.2008, catalog number 102658257.

7. Julien Mailland, "Oral History of Lon Allan," *Silicon Valley Archives*, Department of Special Collections, Stanford University Libraries, March 16, 2020.

8. Mailland, "Oral History."

9. Certificate of Incorporation of Atari, Inc., State of California, June 27, 1972.

10. This figure comes from Nolan Bushnell's sworn court testimony, but Bushnell himself did not have hard figures: "I think it was about 13 to 15 [hundred] units. Since I got a royalty on it I probably have the figure around somewhere for sure"—but that figure does not seem to have been provided to the court. Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), January 13, 1976. Others have cited various figures but without ever providing a citation.

11. On *Spacewar!*, see generally Stewart Brand, "Spacewar: Fanatic Life and Symbolic Death among the Computer Bums," *Rolling Stone*, December 7, 1972, p. 30.

12. Nolan Bushnell, cited in "A Red-Hot Market for Videogames," *Business Week*, November 1, 1973, confirmed by Bushnell in Deposition of Nolan Bushnell, Nutting Ass. v. Atari, Inc., C-77-2443 AJZ (N.D. Cal. Civ.), June 28, 1978.

13. See, for example, "Ted Dabney, a Founder of Atari and a Creator of Pong, Is Dead at 81," *New York Times*, June 1, 2018, Friday, Late Edition, Section B, Obituary, 14, citing Christopher Garcia, "Oral History of Ted Dabney," *Computer History Museum*, July 16, 2012, catalog number 102746457, lot number X6557.2013; Ted Dabney's introduction Marty Goldberg and Curt Vendel, *Atari Inc.: Business Is Fun* (Carmel, NY: Syzygy Press, 2012).

14. To represent a client in seeking a patent from the United States Patent and Trademark Office, the attorney (or agent) must (with very limited exceptions) have passed that agency's bar examination. See generally, 37 C.F.R. §11.7.

15. US Department of Commerce / Patent Office, *Attorneys and Agents Registered to Practice Before the U.S. Patent Office—1974*, 16, https://www.uspto.gov/sites/default/files/documents/Roster%201974.pdf

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16. Lowood, "Oral History of Al Alcorn."

17. Lowood, "Oral History of Al Alcorn."

18. Lowood, "Oral History of Al Alcorn"; Al Alcorn, personal interview no. 1 with author, Portola, CA, September 17, 2019; Al Alcorn, personal interview no. 2 with author, video conference, August 3, 2020.

19. U.S. Patent No. 3,793,483 (filed November 24, 1972) (issued February 19, 1974).

20. Lon Allan is also sometimes referred to as "corporate counsel for the corporation." See Minutes of Meeting of the Board of Directors of Atari, Inc, December 13, 1974, Al Alcorn papers relating to the history of videogames, 1973–1974, Special Collections & University Archives, Stanford University. The firm itself, Hopkins, Jordan, Mitchell & Sullivan, is also sometimes referred to as "the corporation's general counsel." See Minutes of Monthly Meeting of the Board of Directors of ATARI, INC., January 16, 1975, Al Alcorn papers relating to the history of videogames, 1973–1974, Special Collections & University Archives, Stanford University. Lon Allan would later follow Bushnell to become an early investor in, and the general counsel for, Pizza Time Theatres / Chuck-E-Cheese. See generally Mailland, "Oral History"; Mailland, "Nolan."

21. U.S. Patent No. 3,793,483 (filed November 24, 1972) (issued February 19, 1974).

22. Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), January 14, 1976.

23. Lowood, "Oral History of Al Alcorn."

24. Al Alcorn, personal interview no. 2 with author, 2020.

25. Al Alcorn, personal interview no. 2 with author, 2020. See also Lowood, "Oral History of Al Alcorn." See also Brian Deuel, Al Alcorn interview (2000), http://www.ataricompendium.com/archives/interviews/al_alcorn/interview_al_alcorn.html. On the Free Speech Movement and Vietnam War protests in Berkeley, see generally *Berkeley in the Sixties*, directed by Mark Kitchell (1990), transcript available at http://newsreel.org/transcripts/Berkeley-in-the-60s-transcript.pdf.

26. Isaacson, *Innovators*, 212.

27. Berlin, *Troublemakers*, 113.

28. See, for example, Isaacson, *Innovators*, 213; Berlin, *Troublemakers*, 114.

29. Berlin, *Troublemakers*, 120.

30. "Space-Age Pinball," *Time* magazine, April 1, 1974, p. 77.

31. See, for example, on the academic side, Henry Lowood, "Videogames in Computer Space: The Complex History of Pong," *IEEE Annals of the History of Computing* 31, no. 3 (August 2009): 5–19; Raiford Guins, *Atari Design: Impressions on Coin-Operated*

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Videogame Machines (London: Bloomsbury, 2020); and on the popular press side, Isaacson, *Innovators*; Berlin, *Troublemakers*.

32. See generally Janice Mueller, *Patent Law*, 4th ed. (New York: Wolters Kluwer, 2013), 54.

33. Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), January 14, 1976.

34. Berlin, *Troublemakers*, 112.

35. Stephen Sansweet, "Sophisticated Cousin of Pinball Machine Entrances the U.S," *Wall Street Journal*, March 18, 1974, p. 1.

36. Berlin, *Troublemakers*, 122 fn48, citing Atari, Inc. business plans, 1974–1975, Special Collections & University Archives, Stanford University; *Business Week* estimated the figure to be 6,000 in less than a year: "A Red-Hot Market for Videogames," *Business Week*, November 1, 1973.

37. Berlin, *Troublemakers*, 188, quoting Al Alcorn. See also Lowood, "Oral History of Al Alcorn."

38. "A Red-Hot Market for Videogames," *Business Week*, November 1, 1973.

39. "A Red-Hot Market for Videogames," *Business Week*, November 1, 1973.

40. "A Red-Hot Market for Videogames," *Business Week*, November 1, 1973.

41. "A Red-Hot Market for Videogames," *Business Week*, November 1, 1973.

42. "Purchase of Over Half of Atari Set by Warner Communications Inc.," *Wall Street Journal*, September 8, 1976; "Purchase of Atari Inc. Completed by Warner Communications Inc.," *Wall Street Journal*, October 5, 1976.

43. Isaacson, *Innovators*, 214.

44. "A Red-Hot Market for Videogames," *Business Week*, November 1, 1973.

45. Wieder, "Fistful," 62.

46. See generally "The Rolling Stones Disaster at Altamont: Let It Bleed," *Rolling Stone*, January 21, 1970, https://www.rollingstone.com/feature/the-rolling-stones-disaster-at-altamont-let-it-bleed-71299/.

47. Carla Meninsky, personal interview with author, San Francisco, CA, November 14, 2019.

48. Berlin, *Troublemakers*, 122.

49. See Peter Hartlaub. "Arcades' Era:—Play It Again," *San Francisco Chronicle*, February 22, 2015, p. C4. Hartlaub posted the original 1976 photograph on his Twitter

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account on April 20, 2016, https://twitter.com/peterhartlaub/status/722847068788625408.

50. *Playboy*, March 1974; David Owen, "The Second Coming of Nolan Bushnell," *Playboy*, June 1983; David Kushner, "Sex, Drugs, & Videogames: The Rise and Fall of Atari," *Playboy*, July 30, 2012.

51. Wieder, "Fistful," 124–129.

52. Nolan Bushnell interview by Adam Fisher, author of *Valley of Genius: The Uncensored History of Silicon Valley (As Told by the Hackers, Founders, and Freaks Who Made It Boom)*, cited in https://medium.com/s/story/ataris-hard-partying-origin-story-an-oral-history-c438b0ce9440.

53. Wieder, "Fistful," 62.

54. Nolan Bushnell, interviewed in *Wired* magazine, *The Making of the "Atari: Game Over" Documentary with Zak Penn* (documentary film, November 18, 2014), https://www.wired.com/2014/11/atari-game-over-documentary/.

55. "A Red-Hot Market for Videogames," *Business Week*, November 1, 1973; Berlin, *Troublemakers*, 123.

56. *The Gospel According to St. Pong*, July 25, 1973; the bonus amounted to $300 according to Wieder, "Fistful," 62.

57. *The Gospel According to St. Pong*, August 8, 1973.

58. *The Gospel According to St. Pong*, August 8, 1973.

59. "If you're broke, like I am toward the end of the week, you may borrow up to $2 a day as long as you pay it back," described *The Gospel According to St. Pong*, November 7, 1973.

60. Wieder, "Fistful," 62.

61. Berlin, *Troublemakers*, 123.

62. *The Gospel According to St. Pong*, November 7, 1973.

63. *The Gospel According to St. Pong*, August 8, 1973.

64. *The Gospel According to St. Pong*, July 25, 1973.

65. *The Gospel According to St. Pong*, August 8, 1973. The president of Atari had veto power over any action of the council, which in turn could overturn the veto by a three-fourth majority.

66. *The Gospel According to St. Pong*, July 25, 1973.

67. *The Gospel According to St. Pong*, August 8, 1973.

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68. Mailland, "Nolan."

69. Nolan Bushnell with Gene Stone, *Finding the Next Steve Jobs* (New York: Simon & Schuster, 2013), 7–8.

70. *The Gospel According to St. Pong*, July 25, 1973.

71. Wieder, "Fistful," 62. Note that Alcorn is referred to in the article as "Moose," his nickname. See also Scott Cohen, *Zap: The Rise and Fall of Atari* (New York: McGraw-Hill, 1984).

72. Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), July 3, 1974.

73. Atari, Inc. v. Magnavox Co., Complaint for Declaratory Judgment of Patent Invalidity and Non-Infringement, C75 1442 RFD (N.D. Cal. Civ.), July 11, 1975. Note that some of these games were manufactured by KEE GAMES, a subsidiary of Atari. See *Atari Business Plan* (1975), 8; and Guins, *Atari Design*, 213, en48.

74. "Atari Offers Dr. Pong, Puppy Pong At AMA Meet," *Vending Times*, August 1974, p. 68.

75. *Pong In-A-Barrel* (Atari, 1973), collection of the International Arcade Museum at the Museum of the Game, https://www.arcade-museum.com/game_detail.php?game_id=13705.

76. Mailland, "Oral History"; Mailland, "Nolan."

77. See generally Atari collection, International Arcade Museum at the Museum of the Game, https://www.arcade-museum.com/manuf_detail.php?manuf_id=1277&orig_game_id=13554&sort=3.

78. Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), July 3, 1974.

79. U.S. Patent No. 3,793,483 (filed November 24, 1972) (issued February 19, 1974).

80. Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), July 3, 1974. See also Nolan Bushnell, *Talks at Google,* September 20, 2011, posted on YouTube November 4, 2011, https://www.youtube.com/watch?v=l9rNax9h2gM, at 18:55.

81. Royalty Agreement between Bally Mfg. Co. and Nolan Bushnell, June 26, 1972.

82. Royalty Agreement between Bally Mfg. Co. and Nolan Bushnell, June 26, 1972.

83. Deposition of John Britz, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), June 25, 1974.

84. Deposition of John Britz, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), June 25, 1974.

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Note that Bally eventually came "out with another game called Fireball, but it had nothing to do with [Bushnell's] Game."

85. Deposition of John Britz, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), June 25, 1974.

86. Deposition of John Britz, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), June 25, 1974.

87. Deposition of John Britz, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), June 25, 1974.

88. Deposition of John Britz, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), June 25, 1974.

89. Deposition of John Britz, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), June 25, 1974.

90. Agreement between Atari, Inc. and Midway Mfg. Corp., February 22, 1973.

91. Ford, "Copy Game," 17, and fn109.

92. Caps are in the document.

93. There is little record of the game, save for the aforementioned court deposition and an entry in the respected International Arcade Museum database. Asteroid (Midway Mfg. Co., 1973), collection of the International Arcade Museum at the Museum of the Game, https://www.arcade-museum.com/game_detail.php?game_id=6938.

94. Deposition of John Britz, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), June 25, 1974.

95. Ford, "Copy Game," 17.

96. *Winner IV* (Midway Mfg. Co., 1973), collection of the International Arcade Museum at the Museum of the Game, https://www.arcade-museum.com/game_detail.php?game_id=10445.

97. See generally Office of Legal Education Executive Office for United States Attorneys, *Prosecuting Intellectual Property Crimes*, 4th ed. (Washington, DC: Department of Justice, 2013), 297–304; Mueller, *Patent*, 609–658.

98. For a critique of this legal regime, see Yochai Benkler, "WikiLeaks and the PROTECT-IP Act: A New Public-Private Threat to the Internet Commons," *Doedalus, the Journal of the American Academy of Arts & Sciences* 140, no. 4 (Fall 2011): 154–163.

99. When Bushnell refers to "500 copiers," he is more than likely using a figure of speech. Deposition of Nolan Bushnell, Nutting Ass. v. Atari, Inc., C-77-2443 AJZ (N.D. Cal. Civ.), June 28, 1978.

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100. "Space-Age Pinball," *Time Magazine*, April 1, 1974, p. 77. Bushnell also mentions being aware of *Gran Trak 10* being copied in Italy: Deposition of Nolan Bushnell, Nutting Ass. v. Atari, Inc., C-77-2443 AJZ (N.D. Cal. Civ.), June 28, 1978.

101. "A Red-Hot Market for Videogames," *Business Week*, November 1, 1973.

102. See, for example, "1990 Sales Lift Wal-Mart into Top Spot," *Dallas Morning News*, February 15, 1991.

103. On how Apple faced—and overcame—the same problem, see generally Berlin, *Troublemakers*.

104. Al Alcorn, personal interview no. 1 with author, 2019.

105. Al Alcorn, personal interview no. 1 with author, 2019; Al Alcorn, personal interview no. 2 with author, 2020.

106. George Collins (Curator, Magnavox Historical Preservation Association), personal phone interview with author, June 30, 2020.

107. Ralph Baer, *Videogames, in the Beginning* (Springfield, NJ: Rolenta Press, 2005), 111.

108. On Xerox, see generally Berlin, *Troublemakers*; see also generally Clayton M. Christensen, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail* (Brighton, MA: Harvard Business Review Press, 2022).

109. "All-Electronic Game Hooked to TV Set Slated by Magnavox," *Wall Street Journal*, May 11, 1972, p. 15; "The $100 TV game," *Business Week*, May 13, 1972, p. 3. See also George Collins (Curator, Magnavox Historical Preservation Association), personal phone interview with author, June 30, 2020. See also Kate Wilaert, "In Search of the First Videogame Commercial," *Videogame History Foundation*, January 10, 2018, https://gamehistory.org/first-video-game-commercial/. Note, however, that at times, Magnavox made clear that "Odyssey can be attached to any brand television receiver." See a 1972 promotional film "distributed to Magnavox TV dealers on Technicolor Sound-Movie Cartridges," which "could be viewed on a special display device in the dealer showroom," https://www.youtube.com/watch?v=jLGBtkKPj2U.

110. George Collins (Curator, Magnavox Historical Preservation Association), personal phone interview with author, June 30, 2020.

111. *Sears Wish Book*, Christmas catalog (Sears, 1974), product C6 N 25795C.

112. Al Alcorn, personal interview no. 1 with author, 2019; Al Alcorn, personal interview no. 2 with author, 2020.

113. Al Alcorn, personal interview no. 2 with author, 2020.

114. Lowood, "Oral History of Al Alcorn."

115. Al Alcorn, personal interview no. 2 with author, 2020.

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116. Al Alcorn, personal interview no. 2 with author, 2020.

117. Al Alcorn, personal interview no. 1 with author, 2019.

118. Minutes of a September 18, 1975, Meeting of the Board of Directors of ATARI, Inc., Al Alcorn papers relating to the history of videogames, 1973–1974, Special Collections & University Archives, Stanford University.

119. Contract of Purchase between Sears Roebuck and Atari, Inc., Sears Contract no. C061959, March 17, 1975, Al Alcorn papers relating to the history of videogames, 1973–1974, Special Collections & University Archives, Stanford University.

120. Mailland, "Nolan."

121. Mailland, "Nolan."

122. See *Cash Box*, October 11, 1975, p. 48: "Initial consumer distribution of the game will be handled by Sears, Roebuck & Co. The Atari product, incorporating the company's registered trade name 'Pong,' is part of Sears' new 'Telegames' line."

123. Lowood, "Oral History of Al Alcorn."

124. Lowood, "Oral History of Al Alcorn."

125. When he arrived at Atari in 1974, Ronald G. Wayne, the little-known third founder of Apple Computer Company, informed Alcorn that "his entire parts department and warehouse were utter chaos." It was not until 1976 that standard operating procedures started being formalized by Wayne. "Paper Structure" is dated 1976 while the "Operating Procedures and Standards" is dated 1979. Guins, *Atari Design*, 77–79.

126. Al Alcorn, personal interview no. 2 with author, 2020.

127. Baer, *Videogames*, 92.

128. Lowood, "Oral History of Al Alcorn."

129. Al Alcorn, personal interview no. 2 with author, 2020.

130. *Cash Box*, October 11, 1975, p. 48.

131. Lowood, "Oral History of Al Alcorn."

132. Al Alcorn, personal interview no. 2 with author, 2020.

133. Al Alcorn, personal interview no. 2 with author, 2020.

134. Lowood, "Oral History of Al Alcorn."

135. Mueller, *Patent*, 117–118.

136. See, for example, Mueller, *Patent;* Mark D. Janis and Ted Sichelman, ed., *Patent Law: An Open-Source Casebook* (Fall 2021 version). Janis, Mark David and Sichelman, Ted M., Patent Law: An Open-Source Casebook (Introduction) (August 25, 2023).

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Patent Law: An Open-Source Casebook (Fall 2023), Available at SSRN: https://ssrn.com/abstract=3831957 or http://dx.doi.org/10.2139/ssrn.3831957

137. The name of this chapter is a pun on the famous book and movie *Ready Player One*, a science-fiction piece centered on virtual reality games. See Ernest Cline, *Ready Player One* (2011); Steven Spielberg, *Ready Player One* (feature film, 2018).

138. 35 U.S. Code § § 282.

139. 35 U.S. Code § 102 (pre-AIA).

140. 35 U.S. Code § 102(b) (pre-AIA).

141. Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), January 14, 1976.

142. Nolan Bushnell, *Talks at Google*.

143. Ed Adlum, cited in "Atari Turns 25," *RePlay Magazine*, July 1997, p. 8.

144. Mueller, *Patent*, 190.

145. Mueller, *Patent*, 194.

146. Al Alcorn, personal interview no. 2 with author, 2020.

147. Al Alcorn, personal interview no. 1 with author, 2019.

148. Berlin, *Troublemakers*, 119, citing Al Alcorn.

149. Al Alcorn, personal interview no. 1 with author, 2019; Al Alcorn, personal interview no. 2 with author, 2020; Isaacson, *Innovators*, 212–214.

150. See, for example, "Inventing an Industry: The Atari Games Legacy," *RePlay Magazine*, July 1997, p. 4: "What Bushnell and his original teammates like Al Alcorn actually did was 'invent' an industry, . . . first by designing and manufacturing affordable coin-op 'computer games' using video monitors as playfields and then by bringing a less exotic version of it to the homeowner via attachments to sets in living rooms."

151. On Apple's early struggles, see Berlin, *Troublemakers*.

152. Minutes of the December, 1975 Meeting of the Board of Directors, Al Alcorn papers relating to the history of videogames, 1973–1974, Special Collections & University Archives, Stanford University; Minutes of a September 18, 1975, Meeting of the Board of Directors of ATARI, Inc., Al Alcorn papers relating to the history of videogames, 1973–1974, Special Collections & University Archives, Stanford University; "Atari Sells Itself to Survive Success," *Business Week*, November 1976; Mailland, "Oral History"; Mailland, "Nolan."

153. Isaacson, *Innovators*, 215.

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154. A more recent example of the difficulty of scaling in a small and competitive market is provided by the Sirius/XM satellite radio merger, where the competitors had to merge in order to be able to scale enough to survive.

155. Another factor was the infusion of cash by Warner, which bought Atari, in 1976: "'Atari's problem is a cash problem,' says Emanuel Gerard, an executive vice president of Warner, which paid $28 million in cash and debt securities for Atari, and money is not a problem for us." "Atari Sells Itself to Survive Success," *Business Week*, November 1976. See also Mailland, "Nolan."

156. Magnavox Co. v. Chi. Dynamic Indus., Nos. 74 C 1030, 74 C 2510, 1977 U.S. Dist. LEXIS 17996.

157. Magnavox Co. v. Chi. Dynamic Indus., Nos. 74 C 1030, 74 C 2510, 1977 U.S. Dist. LEXIS 17996.

158. Gardner Hendrie, "Oral History of Ralph Baer," *Computer History Museum*, October 12, 2006, and November 27, 2006, lot number X3775.2007, catalog number 102657972.

159. Gardner Hendrie, "Oral History of Ralph Baer."

160. Baer, *Videogames*.

161. Baer, *Videogames*; Nolan Bushnell with Gene Stone, *Finding the Next Steve Jobs* (New York: Simon & Schuster, 2013).

162. Note that this figure is only an estimate, because settlement agreements are generally not public. The 60+ figure is based on the fact that, by early 1983, Mattel would become the fifty-ninth licensee: "Magnavox Settles Patent Infringement Suit with Mattel," *Associated Press*, February 15, 1983. The $100+ million figure is from Baer, *Videogames*, 88.

163. Al Alcorn, personal interview no. 2 with author, 2020.

164. Al Alcorn, personal interview no. 1 with author, 2019.

165. Al Alcorn, personal interview no. 1 with author, 2019. On the links between the *'483* and the *'507*, see two extensive court depositions by Nolan Bushnell: Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), July 3, 1974; Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), March 4, 1976. Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), July 3, 1974.

166. *Cash Box*, October 11, 1975, p. 48.

167. Letter from Tom Herbert to Arthur Young & Co. dated May 17, 1976, Atari/Warner closing books, schedule 13, item 3, on file with author.

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168. "Magnavox Sues Firms Making Videogames, Charges Infringement," *Wall Street Journal*, April 17, 1974.

169. Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), July 3, 1974.

170. Letter from Tom Herbert to Arthur Young & Co. dated May 17, 1976, Atari/Warner closing books, schedule 13, item 3, on file with author.

171. The exact figures, as of May 29, 1976, were "$73,123.27 already billed, plus an estimated $40,000 not yet billed." Letter from Tom Herbert to Arthur Young & Co. dated May 17, 1976, Atari/Warner closing books, schedule 13, item 3, on file with author.

172. Deposition of Nolan Bushnell, Nutting Ass. v. Atari, Inc., C-77-2443 AJZ (N.D. Cal. Civ.), June 28, 1978.

173. On Briody's role over the years within Magnavox, see Deposition of Thomas Briody, Magnavox Co. v. Activision, Inc., C 82 5270 THE (N.D. Cal. Civ.), November 15, 1982.

174. Al Alcorn, personal interview no. 1 with with author, 2019. See also Letter from Tom Herbert to Arthur Young & Co. dated May 17, 1976, Atari/Warner closing books, schedule 13, item 3, on file with author, where Tom Herbert explains that it is "our understanding of the company's intentions that it will contest the case vigorously in the Court. However, the company has kept an open mind with respect to the possibility of settlement out of court and has, in fact, held a number of settlement conferences with the Magnavox attorneys." The reference to "the company," Atari, holding settlement conferences, seems to imply that Tom Herbert was not part of the negotiations.

175. According to Lon Allan, "Magnavox was handled by Atari' IP counsel, Tom Herbert, not me a corporate counsel. . . . Nolan did 'kick the lawyers out of the room' to negotiate the settlement. I heard that from Nolan himself. Indeed, he was proud of it." Lon Allan, personal email to author, June 15, 2020.

176. Deposition of John Britz, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), June 25, 1974.

177. Deposition of Nolan Bushnell, Nutting Ass. v. Atari, Inc., C-77-2443 AJZ (N.D. Cal. Civ.), June 28, 1978.

178. Final Judgment of Consent, Magnavox Co. v. Atari, Inc., June 9, 1976, in Atari/Warner closing books, schedule 13, item 3, on file with author.

179. Order of Dismissal, Magnavox Co. v. Sears Roebuck, June 9, 1976, in Atari/Warner closing books, schedule 13, item 3, on file with author.

180. Settlement Agreement between The Magnavox Company, Sanders Associates, Inc., and Atari, Inc., dated June 8, 1976.

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181. Non-Exclusive Cross-License for Video-Games between The Magnavox Company, Sanders Associates, Inc., and Atari, Inc., dated June 8, 1976.

182. Aljean Jarmetz, "Home Videogames Nearing Profitability of the Film Business," *New York Times*, October 4, 1982, section A, page 1, column 3.

183. For example, the case between Magnavox and Activision was initiated in 1981, and was still ongoing in 1992. For current statistic and timelines, risks, and costs of patent litigation, see James C. Yoon, Wilson Sonsini Goodrich & Rosati, "IP Litigation in United States," presentation at Stanford Law School, August 4, 2016, https://law.stanford.edu/wp-content/uploads/2016/07/Revised-Stanford-August-4-2016-Class-Presentation.pdf.

184. Al Alcorn, personal interview no. 2 with author, 2020.

185. Mailland, "Nolan."

186. Al Alcorn, personal interview no. 2 with author, 2020.

187. Al Alcorn, personal interview no. 2 with author, 2020.

188. See, for example, Deposition of Thomas Briody, Magnavox Co. v. Activision, Inc., C 82 5270 THE (N.D. Cal. Civ.), November 15, 1982.

189. The practice of patent trolling has existed since the late nineteenth century. See Con Diaz, *Software*, 278. On patent trolling in general, see Electronic Frontier Foundation, *Patent Trolls*, last visited January 6, 2024, https://www.eff.org/issues/resources-patent-troll-victims.

190. Deposition of Thomas Briody, Magnavox Co. v. Activision, Inc., C 82 5270 THE (N.D. Cal. Civ.), November 15, 1982.

191. "Magnavox Settles Patent Infringement Suit with Mattel," *Associated Press*, February 15, 1983.

192. See, for example, Ralph Baer's internal Sanders memo to Richard Seligman, Director of Patents and Licensing, June 4, 1987.

193. Letter of Richard Seligman, Sander's Director of Patents and Licensing, to Algy Tamoshunas, Esq., lawyer for North American Philips, June 10, 1987, forwarding Ralph Baer's internal Sanders memo to Richard Seligman, Director of Patents and Licensing, June 4, 1987, copy on file with author.

194. Ford, "Copy Game," 37, and fn269. They would last until at least 1998. In addition to the cases detailed in this chapter, defendants included APF Electronics, Fairchild, K mart, North American Foreign Trading, Taito, Nintendo, Sega, Capcom, Data East, Konami, SNK, and Tecmo. See also Deposition of Thomas Briody, Magnavox Co. v. Activision, Inc., C 82 5270 THE (N.D. Cal. Civ.), November 15, 1982.

195. Magnavox Co. v. Chi. Dynamic Indus., Nos. 74 C 1030, 74 C 2510, 1977 U.S. Dist. LEXIS 17996.

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196. Baer, *Videogames*, 14.

197. Deposition of Thomas Briody, Magnavox Co. v. Activision, Inc., C 82 5270 THE (N.D. Cal. Civ.), November 15, 1982.

198. Magnavox Co. v. Chi. Dynamic Indus., Nos. 74 C 1030, 74 C 2510, 1977 U.S. Dist. LEXIS 17996.

199. Bushnell testified under oath to that fact. GA5 p1. A copy of the guest book, signed by Bushnell, of the Odyssey demonstration show in Burlingame California in May of 1972 is presented in Baer, *Videogames*, 81.

200. See Magnavox Co. v. Mattel, Inc., No. 80 C 4124 (N.D. Ill. Civ.), July 29, 1982, 1982 U.S. Dist. LEXIS 13773, 216 U.S.P.Q. (BNA) 28.

201. Gordon E. Moore, "Cramming More Components onto Integrated Circuits," *Electronics* 38, no. 8 (April 19, 1965).

202. U.S. Patent No. Re. 28,507 (filed May 27, 1969, issued April 25, 1972 as no. 3,659,284) (reissue application filed April 25, 1974, reissued August 5, 1975).

203. Magnavox Co. v. Mattel, Inc., No. 80 C 4124 (N.D. Ill. Civ.), July 29, 1982, 1982 U.S. Dist. LEXIS 13773, 216 U.S.P.Q. (BNA) 28. On Sears being sued as distributor of the Intellivision console and cartridges, see "Magnavox Settles Patent Infringement Suit with Mattel," *Associated Press*, February 15, 1983.

204. Henry Lowood, "Videogames in Computer Space: The Complex History of Pong," *IEEE Annals of the History of Computing* 31, no 3 (August 2009), 5–19; Al Alcorn, "The Story of Pong," *Australian Center for the Moving Image*, March 6, 2008; Ford, "Copy Game," 12, and fn65.

205. Magnavox Co. v. Mattel, Inc., No. 80 C 4124 (N.D. Ill. Civ.), July 29, 1982, 1982 U.S. Dist. LEXIS 13773, 216 U.S.P.Q. (BNA) 28.

206. See, for example, Edward Manzo, "Means Claims in Patent Infringement Litigation," *Journal of the Patent and Trademark Office Society* 68 (1986): 97; see also the literature review in Mueller, *Patent*, 101–108.

207. See 35 U.S.C. §112 6th paragraph (pre-AIA), now 35 U.S.C. §112(f) (post-AIA).

208. Edward D. Manzo, "The Untold Story of the First Appeal to the Federal Circuit," *Federal Circuit Bar Journal* 25 (2015): 1, 2.

209. U.S. Patent No. Re. 28,507 (filed May 27, 1969, issued April 25, 1972, as no. 3,659,284) (reissue application filed April 25, 1974, reissued August 5, 1975), claim no. 25, emphasis added.

210. Magnavox Co. v. Mattel, Inc., No. 80 C 4124 (N.D. Ill. Civ.), July 29, 1982, 1982 U.S. Dist. LEXIS 13773, 216 U.S.P.Q. (BNA) 28.

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211. Magnavox Co. v. Mattel, Inc., No. 80 C 4124 (N.D. Ill. Civ.), July 29, 1982, 1982 U.S. Dist. LEXIS 13773, 216 U.S.P.Q. (BNA) 28.

212. Manzo, "Untold," 7.

213. Aljean Jarmetz, "Home Videogames Nearing Profitability of the Film Business," *New York Times*, October 4, 1982, section A, page 1, column 3. Note that others have suggested slightly different figures, for example, John Hubner and William F. Kistner Jr., "What Went Wrong at Atari?," *InfoWorld* 5, no. 48 (November 28, 1983): 157, attributing to Atari an 80 percent share of the home game hardware and software market. It is difficult to compare figures because the news reports do not generally detail what they are reporting: consoles only, consoles + games, or games only. While these figures are helpful to get a feel for orders of magnitude, I encourage the reader to take them with a grain of salt when it comes to specifics.

214. Norman Sklarewitz, "Computerized Games Hit Profits Jackpot for Mattel Company," *Christian Science Monitor*, May 24, 1982. *InfoWorld* magazine had the number at 15 percent in 1982. Hubner and Kistner Jr., "What Went." The *New York Times* attribute Mattel an 18 to 20 percent share of the market for consoles by October 1984, Aljean Jarmetz, "Home Videogames Nearing Profitability of the Film Business," *New York Times*, October 4, 1982, section A, page 1, column 3.

215. Aljean Jarmetz, "Home Videogames Nearing Profitability of the Film Business," *New York Times*, October 4, 1982, section A, page 1, column 3.

216. For a detailed story of the appeal, and a critique of Judge Leighton's reasoning, penned by one of Mattel's lawyers, see Manzo, "Untold."

217. See, for example, "Mattel Predicts Fourth-Quarter Loss Despite Third-Quarter Earnings Increase," *Associated Press*, December 9, 1982: "Mattel said Thursday that shipments of Intellivision games and components are above shipments a year ago, but said it anticipated substantial marketing expenses and a weaker retail environment than in the last year's fourth quarter."

218. Note, however, that unlike Atari, they did not have to publicly admit to having infringed on the *'507*. "Magnavox Settles Patent Infringement Suit with Mattel," *Associated Press*, February 15, 1983.

219. Manzo, "Untold"; Edward Manzo, personal interview with author, video conference, January 19, 2021.

220. See Manzo, "Means"; Penwalt Corp. v. Durand-Wayland, Inc., 833 F.2d 931 (Fed. Cir.1987).

221. Al-Site Corp v. VSI Int'l, Inc., 174 F.3d 1308 (Fed. Cir. 1999), at 1320; See also Mueller, *Patent*, 104. The Federal Circuit was building on the Supreme Court's earlier decision in Warner-Jenkinson Co. v. Hilton Davis Chem. Co., 520 U.S. 17 (1997).

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222. Edward Manzo, personal interview with author, video conference.

223. Manzo, "Untold," 13; Edward Manzo, personal interview with author, video conference.

224. "Magnavox Settles Patent Infringement Suit with Mattel," *Associated Press*, February 15, 1983.

225. Deposition of Thomas Briody, Magnavox Co. v. Activision, Inc., C 82 5270 THE (N.D. Cal. Civ.), November 15, 1982.

226. Carla Meninsky, personal interview with author; Mailland, "Oral History"; Mailland, "Nolan."

227. Hubner and Kistner Jr., "What Went," 146.

228. Larry Kaplan, quoted in Hubner and Kistner Jr., "What Went," 158.

229. Al Alcorn, personal interview no. 1 with author, 2019.

230. Al Alcorn, personal interview no. 1 with author, 2019. See also Hubner and Kistner Jr., "What Went," 146.

231. Hubner and Kistner Jr., "What Went," 146.

232. Hubner and Kistner Jr., "What Went," 146.

233. Letter of Aldo Test, Flehr, Hohbach, Test, Albritton & Herbert, to Edward W. Goodman, Licensing Counsel, The Magnavox Company June 10, 1981.

234. Letter of Edward W. Goodman, Licensing Counsel, The Magnavox Company, to Aldo J. Test, Flehr, Hohbach, Test, Albritton & Herbert, June 26, 1981.

235. Magnavox Co. v. Activision, Inc., C 82 5270 CAL, 1986 U.S. Dist LEXIS 30999 (N.D. Cal. Civ.), March 13, 1986.

236. Al Alcorn, personal interview no. 2 with author, 2020.

237. Memo of Thomas Hafer, VP and General Counsel of Philips Consumer Electronics, to Roger Hoover, counsel for Lockheed Sanders, Inc., July 23, 1991, https://www.ipmall.info/sites/default/files/hosted_resources/Activision_Litigation_Documents/Folder_1/Philips-Na_Philips-Lockheed_Corp_And_Lockheed_Sanders_Schedule_13D_28Jul92.pdf.

238. Filing Agreement of Securities and Exchange Commission Schedule 13D, November 1992.

Chapter 3

1. Lowood, "Oral History of Al Alcorn."

2. Lowood, "Oral History of Al Alcorn."

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3. 35 U.S. Code § 102. Conditions for patentability; novelty and loss of right to patent.

4. Robert Hulse, "Federal Circuit Applies On-Sale Bar in Case Involving Software," *San Francisco Daily Journal,* September 15, 2003, pp. 5–6.

5. Hulse, "Federal Circuit." For further discussion of underlying policy considerations, see *Manual of Patent Examining Procedure*, 9th ed. (June 2020), section 2133.03, Rejections Based on "Public Use" or "On Sale" [R-11.2013], https://www.bitlaw.com/source/mpep/2133_03_a.html; Mueller, *Patent*.

6. In the field of patents, this "monopoly" is actually a right to exclude others. The subtle distinction here is that being granted a patent does not give an inventor an active right to distribute the invention. For example, a chemist might receive a patent over a new drug, but not receive approval from the Food and Drug Administration (FDA) to bring the product to market. In this case, then, the inventor would not literally get a monopoly over the drug since there would be no market for the drug. But the inventor would still have a legal right to preclude others from manufacturing and distributing the drug.

7. Mueller, *Patent*, 199.

8. Hulse, "Federal Circuit."

9. Mueller, *Patent*, 174.

10. Mueller, *Patent*, 190.

11. Mueller, *Patent*, 194.

12. Hulse, "Federal Circuit."

13. Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), July 3, 1974. See also Henry Lowood, "Videogames in Computer Space: The Complex History of Pong," *IEEE Annals of the History of Computing* 31, no. 3 (August 2009): 10. See also Nolan Bushnell, *Talks at Google*, at 19′:00" , September 20, 2011, posted on YouTube November 4, 2011, https://www.youtube.com/watch?v=l9rNax9h2gM

14. Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), January 13, 1976.

15. Bushnell, *Talks at Google*, at 17′:30′. See also a history blog post that dates the event as of the "end of the summer of 1971" but does not cite its source: Benj Edwards, "Computer Space and the Dawn of the Arcade Videogame," *Technologizer*, December 11, 2011, https://www.technologizer.com/2011/12/11/computer-space-and-the-dawn-of-the-arcade-video-game/2/.

16. Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), January 13, 1976; Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), July 3, 1974.

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17. 35 U.S. Code § 102(b) (pre-AIA), emphasis added.

18. United States Patent and Trademark Office patent database, https://www.uspto.gov/patents/search.

19. *Manual of Patent Examining Procedure,* 9th ed. (June 2020), section 2133.03(a), "Public Use" [R-08.2017], https://www.bitlaw.com/source/mpep/2133_03_a.html, citing in re Blaisdell, 242 F.2d 779, 783, 113 USPQ 289, 292 (CCPA 1957); Hall v. Macneale, 107 U.S. 90, 96–97 (1882).

20. Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030, January 14, 1976.

21. See, for example, Curt Vendel and Marty Goldberg, *Atari Inc.: Business Is Fun* (Carmel, NY: Syzygy Press, 2012); Edwards, "Computer Space." On the dynamics, and tensions, between the work of game-history hobbyists and academics, see Kevin Driscoll, "Cooperative Mode for Amateur and Academic Game Histories," *ROMchip* 1, no. 1 (July 2019), https://romchip.org/index.php/romchip-journal/article/view/71.

22. Mueller, *Patent*, 210, citing TP Labs., Inc. v. Professional Positioners, Inc., 724 F.2d 965 (Fed. Circ. 1984).

23. United States Patent and Trademark Office, "Permitted Experimental Activity and Testing," *Manual of Patent Examining Procedure*, Chapter 2100, section 2133.03(e)(6), https://www.uspto.gov/web/offices/pac/mpep/s2133.html#d0e205061.

24. In re Smith, 714 F.2d 1127, 1135 (Fed. Cir. 1983); United States Patent and Trademark Office, "Permitted Experimental Activity and Testing," *Manual of Patent Examining Procedure*, chapter 2100, section 2133.03(e)(6), https://www.uspto.gov/web/offices/pac/mpep/s2133.html#d0e205061, citing Smith & Davis Mfg. Co. v. Mellon, 58 F.705, 707 (8th Cir. 1893).

25. Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), January 14, 1976.

26. 35 U.S.C. §282.

27. Washburn & Moen Mfg. Co. v. Beat 'Em All Barbed-Wire Co., 143 U.S. 275 (1892). See also generally George Gerstman, *Clear and Convincing Evidence* (Bloomington, IN: AuthorHouse, 2013), xiv–xv.

28. Bushnell, *Talks at Google*, at 17':14".

29. See, for example, Eric A. Kelly, "Is the Prototypical Small Inventor at Risk of Inadvertently Eliminating Their Traditional One-Year Grace Period under the America Invents Act?—Interpreting 'or Otherwise Available to the Public' per new § 102(A) and 'Disclosure' per new § 102(B)," *Texas Intellectual Property Law Journal* 21 (2013): 373; William C. Rooklidge and Stephen C. Jensen, "Common Sense, Simplicity and Experimental Use Negation of the Public Use and on Sale Bars to Patentability," *John Marshall*

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Law Review 29 (1995): 1; Robert J. Yarbrough, "Changes to 35 USC 102 under the America Invents Act," November 2011, https://www.yarbroughlaw.com/Publications/pubs_patent_13_changes_to_35USC102.htm;"Watch Out for Statutory Bars: Don't Lose Patent Rights before You Even File the Application," *Findlaw*, July 5, 2017, https://corporate.findlaw.com/intellectual-property/watch-out-for-statutory-bars-don-t-lose-patent-rights-before-you.html.

30. In re Mann, 861 F.2d 1581 (Fed. Cir. 1988).

31. *Manual of Patent Examining Procedure*, 9th ed. (June 2020), section 2133.03(a), "Public Use" [R-08.2017], https://www.bitlaw.com/source/mpep/2133_03_a.html, citing In re Blaisdell, 242 F.2d 779, 783, 113 USPQ 289, 292 (CCPA 1957); Hall v. Macneale, 107 U.S. 90, 96–97 (1882).

32. *Manual of Patent Examining Procedure*, 9th ed. (June 2020), section 2133.03(a), "Public Use" [R-08.2017], https://www.bitlaw.com/source/mpep/2133_03_a.html, citing Bernhardt, L.L.C. v. Collezione Europa USA, Inc., 386 F.3d 1371, 1380–81, 72 USPQ2d 1901, 1909 (Fed. Cir. 2004); In re Smith, 714 F.2d 1127, 1134, 218 USPQ 976, 983 (Fed. Cir. 1983), Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261, 1265, 229 USPQ 805, 809 (Fed. Cir. 1986); see Ex parte C, 27 USPQ2d 1492, 1499 (Bd. Pat. App. & Inter. 1992).

33. Mueller, *Patent*, 202, discussing Egbert v. Lippmann, 104 U.S. 333 (1881).

34. *Showtime!* MOA Expo advertisement, in *Cash Box*, October 16, 1971.

35. *Cash Box*, October 30, 1971.

36. *Manual of Patent Examining Procedure*, 9th ed. (June 2020), section 2133.03(a), "Public Use" [R-08.2017], https://www.bitlaw.com/source/mpep/2133_03_a.html, citing In re Blaisdell, 242 F.2d 779, 783, 113 USPQ 289, 292 (CCPA 1957); Hall v. Macneale, 107 U.S. 90, 96–97 (1882); "Display of equipment including the structural features of the claimed invention to visitors of laboratory is public use even though public did not see inner workings of device. The person to whom the invention is publicly disclosed need not understand the significance and technical complexities of the invention." United States Patent and Trademark Office, "PUBLIC KNOWLEDGE IS NOT NECESSARILY PUBLIC USE UNDER Pre-AIA 35 U.S.C. 102(b)," *Manual of Patent Examining Procedure*, chapter 2100, section 2133, https://www.uspto.gov/web/offices/pac/mpep/s2133.html#d0e205061.

37. *Cash Box*, October 30, 1971.

38. "Atari Turns 25," *RePlay Magazine*, July 1997, p. 8.

39. *Cash Box*, October 30, 1971.

40. Ed Adlum, cited in "Atari Turns 25," *RePlay Magazine*, July 1997, p. 8.

41. Ted Sichelman and Mark D. Janis, "Chapter 5: Anticipation," in *Patent Law: An Open-Source Casebook,* ed. Mark D. Janis and Ted Sichelman (Fall 2021), 10.

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42. Mark D. Janis, "Chapter 1: The Patent and Its Claims," in *Patent Law: An Open-Source Casebook,* ed. Mark D. Janis and Ted Sichelman (Fall 2021 version), 2.

43. Purdue Pharma LP v. Epic Pharma, LLC, 811 F.3d 1345, 1351 (Fed. Cir. 2016).

44. Ted Sichelman and Mark D. Janis, "Chapter 5: Anticipation," 4.

45. See generally United States Patent and Trademark Office, "'Printed Publications' as Prior Art," *Manual of Patent Examining Procedure*, chapter 2100, section 2128, https://www.uspto.gov/web/offices/pac/mpep/s2128.html.

46. See, for example, Andrew H. DeVoogd and Serge Subach, "§102(b) Printed Publication: Unrestricted Distribution at a Trade Show," Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C Insights Center, November 5, 2018, https://www.mintz.com/insights-center/viewpoints/2231/2018-11-ss102b-printed-publication-unrestricted-distribution-trade, citing GoPro, Inc. v. Contour IP Holding LLC, 898 F.3d 1170 (Fed. Cir. 2018); "Watch Out for Statutory Bars: Don't Lose Patent Rights before You Even File the Application," *Findlaw*, July 5, 2017, https://corporate.findlaw.com/intellectual-property/watch-out-for-statutory-bars-don-t-lose-patent-rights-before-you.html.

47. Hulse, "Federal Circuit."

48. Moleculon Research Corp. v. CBS, Inc., 793 F.2d 1261 (Fed. Cir. 1986).

49. In Re John Kollar, 286 F.3d 1326 (Fed. Cir. 2002), citing Mas-Hamilton Group v. LaGard, Inc., 156 F.3d 1206, 1217, 48 USPQ2d 1010, 1019 (Fed. Cir. 1998).

50. Edwards, "Computer Space"; see also Vendel and Goldberg, *Atari Inc*.

51. Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), January 13, 1976; Deposition of Nolan Bushnell, Magnavox Co. v. Bally Mfg. Co., CA 74C1030 (N.D. Ill. Civ.), July 3, 1974.

52. Lucas Osborn, Deconstructing an "Offer" to Sell, unpublished manuscript, last visited February 14, 2021, http://unclaw.com/chin/teaching/patent/osborn.pdf.

53. Lucas Osborn, "The Leaky Common Law: An 'Offer to Sell' as a Policy Tool in Patent Law and Beyond," *Santa Clara Law Review* 53 (2013): 143.

54. Larry S. Zelson, "The Illusion of 'Offer to Sell' Patent Infringement: When an Offer Is an Offer but Is Not an Offer," *University of Pennsylvania Law Review* 154 (2006): 1283.

55. Pfaff v. Wells Electronics, 25 U.S. 55 (1998).

56. Group One, Ltd. v. Hallmark Cards, Inc., 254 F.3d 1041, 1043 (Fed.Cir.2001); Linear Tech. Corp. v .Micrel, Inc., 275 F.3d 1040, 1048 (Fed.Cir.2001).

57. *Restatement (Second) of Contracts* (American Law Institute, 1981), §24.

58. On this overall topic, see Scott Hovey, "The On-Sale Bar: A Uniform and Consistent Standard," *Wake Forest Intellectual Property Law Journal* 6 (2006): 1.

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59. To be sure, sell sheets were produced, and are available at the Strong National Museum of Play and at the International Arcade Museum and Killer List of Videogames at the Museum of the Game (https://flyers.arcade-museum.com/videogames/show/1426). What is unclear is whether they were available at the MOA. Raiford Guins has analyzed Nutting Associates' Official Scrapbook at the Strong National Museum of Play, a document started in the fall of 1967, which starts with the following proclamation: "Being a record of the appearance in print of notables of this company, advertisements of this company and of its competitors." However, upon finding sixty-nine blank pages, Guins laments: "my grin soon loses its composure when I realize the scrapbook ends abruptly in 1969. Ensuing pages fail to record additional years." Guins continues, looking for and not finding a record of Nutting Associates' presence at the MOA: "The year 1971 is an even bigger enigma because its significance is well documented in the annals of game history. It's when Bushnell and Dabney's Computer Space debuted at MOA in October. Regardless of its less than stellar sales of only a thousand units by spring 1972, I would expect those barren pages to be overcrowded with the conspicuous sell sheet, or promotional flyer . . . The accoutrements I've come to expect when reading about Computer Space—be it from the hand of a scholar or enthusiast—are not found in the scrapbook, only sixty-nine pages of nothingness cum place marker for events transpired." Raiford Guins, "Scrapbooking a Sophisticated Vending Machine, or An Object Lesson for Game Historiography," *ROMchip*, vol.5 no.2, December 2023, https://romchip.org/index.php/romchip-journal/article/view/175

60. Deposition of John Britz, Magnavox Co. v. Bally Mfg. Co., CA 74C1030, June 25, 1974.

61. Lowood, "Oral History of Al Alcorn."

62. Al Alcorn, personal interview no. 2 with author, 2020.

63. US Department of Justice, *Prosecuting Intellectual Property Crimes*, 4th ed. (Washington, DC: Office of Legal Education Executive Office for United States Attorneys, 2013).

64. US Department of Justice, *Prosecuting Intellectual Property Crimes*, 4th ed. (Washington, DC: Office of Legal Education Executive Office for United States Attorneys, 2013).

65. Again, we cannot say here this was in fact a mistake by the lawyer, as we do not know whether Bushnell disclosed these early activities to the patent lawyer before the patent application was filed. Nor do we know, if the patent lawyer was so informed, what investigation he made into these facts and what conclusions he made about such activities.

Chapter 4

1. I of course refer to the work of economist Joseph Schumpeter. See generally Joseph Schumpeter, *The Theory of Economic Development* (1911), and Joseph Schumpeter, *Capitalism, Socialism and Democracy* (1942).

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2. Sharknado, TV film directed by Anthony C. Ferrante, for SyFy (2013).

3. The mark, USPTO #86364782, which was filed for on August 12, 2014, was actually cancelled on December 3, 2021. Neotokeo2001 could therefore now release the game without fear of prosecution on the trademark front.

4. Universal City Studios, Inc. v. Nintendo Co Ltd, 746 F.2d 112 (2d Cir. 1984).

5. The original announcement is still online at https://forum.digitpress.com/forum/showthread.php?172816-SHARKNADO-(Atari-2600), last visited January 6, 2024. The video of the gameplay posted on YouTube by its author still lists the game as *Sharknado*.

6. Mailland, "Nolan, with Respect, This Is Really Lousy Pizza': Conversations with Lon Allan, Original General Counsel for Atari and Pizza Time Theatre / Chuck E. Cheese," *ROMchip*, July 2020, https://romchip.org/index.php/romchip-journal/article/view/106.

7. John Hubner and William Kistner Jr., "What Went Wrong at Atari?," *InfoWorld* 5, no. 48 (November 28, 1983) 51–158.

8. Nolan Bushnell, quoted in Hubner and Kistner Jr., "What Went," 157.

9. Gene Lipkin, quoted in Hubner and Kistner Jr., "What Went," 157.

10. Larry Kaplan, quoted in Hubner and Kistner Jr., "What Went," 158.

11. Richard Lambert and Louise Kehoe, "The Moral of Pitfall Harry and the Swamp," *Financial Times*, December 11, 1982.

12. Larry Kaplan, quoted in Hubner and Kistner Jr., "What Went," 158.

13. Mailland, "Nolan."

14. Carla Meninsky, personal interview with author, San Francisco, CA, November 14, 2019.

15. Hubner and Kistner Jr., "What Went," 158.

16. Al Alcorn, personal interview no. 1 with author, 2019.

17. Al Backiel, "Alan Miller Interview," *Atari Compendium*, undated document, http://www.ataricompendium.com/archives/interviews/alan_miller/interview_alan_miller.html; Brett Weiss, "Interview with Activision Co-Founder Jim Levy," *Brett Weiss Blog*, May 17, 2020, http://www.brettweisswords.com/2020/05/interview-with-activision-co-founder.html.

18. Backiel, "Alan Miller."

19. Ben Reeves, "Activisionaries: How Four Programmers Changed the Game Industry," *Game Informer*, February 26, 2013, https://www.gameinformer.com/b/features/archive/2013/02/26/activisionaries-how-four-programmers-changed-the-game-industry-forever.aspx.

20. Reeves, "Activisionaries"; Hubner and Kistner Jr., "What Went," 146.

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21. Jeffrey Fleming, "The History of Activision," *Gamasutra,* July 30, 2007, https://www.gamedeveloper.com/business/the-history-of-activision.

22. Larry Kaplan, quoted in Hubner and Kistner Jr., "What Went," 158.

23. Fleming, "History of Activision."

24. Carla Meninsky, interview with author, San Francisco, CA, November 14, 2019; Hubner and Kistner Jr., "What Went," 158. A picture of Al Alcorn holding the T-shirt in question was reproduced in Tekla Perry, Carol Truxal, and Paul Wallich, "Videogames: The Electronic Big Bang," *IEEE Spectrum*, December 1982, 28.

25. Kathleen K. Wiegner, "New Stars, New Firmament," *Forbes*, May 24, 1982.

26. Backiel, "Alan Miller."

27. Cal. Civ. Code. §1673 (1872). The current iteration of the rule is codified in the California Business and Profession Codes section 16600: "Except as provided in this chapter, every contract by which anyone is restrained from engaging in a lawful profession, trade, or business of any kind is to that extent void." Cal. Bus. & Prof. Code § 16600. For a detailed history of why and how this rule came to exist, see Gilson, "Legal Infrastructure."

28. Cal. Bus. & Prof. Code § 16601

29. Al Alcorn, personal interview no. 1 with author, 2019; Larry Kaplan, quoted in Hubner and Kistner Jr., "What Went," 146.

30. See Perry, Truxal, and Wallich, "Videogames," 22.

31. Another way to prevent employees from starting a competing venture is to lock them into long-term employment agreements. For example, as Atari was about to be sold to venture capitalists Sequoia Capital, Time, Mayfield II, and Fidelity in the summer/fall of 1975, Al Alcorn committed to a fixed three-year term he could not terminate had he wanted to: this enabled the VCs both to lock in talent and to preclude competition, as a condition of the sale: had Alcorn become undesirable, he would have been sent to the beach, while being prevented from starting a competing venture. Employment Agreement between Atari, Inc., and Allan E. Alcorn, August 28, 1975, Al Alcorn papers relating to the history of videogames, 1973–1974, Special Collections & University Archives, Stanford University. Mike Albaugh, who worked in Atari's coin-op division (and its many iterations) from 1976 until 2000, recalls having a one-year rolling contract, which auto-renewed lest either of the parties give a one-year termination notice. That, practically, locked him in, because Silicon Valley firms tend not to hire a year in advance. The benefit of this disguised non-compete was that he did get a one-year termination notice when he got laid off in 2000. Mike Albaugh, interview with author, Mountain View, CA, October 17, 2019.

32. Al Alcorn, personal interview no. 1 with author, 2019; Hubner and Kistner Jr., "What Went," 151–158.

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33. David Crane, email to author, June 29, 2022.

34. For a detailed account of the legal, economic, and organizational impact of the rule in Silicon Valley, see Gilson, "Legal Infrastructure." See also Saxenian, *Regional Advantage*.

35. California Secretary of State, record # 962542.

36. Backiel, "Alan Miller."

37. Deposition of James H. Levy, Magnavox Co. v. Activision, Inc. (N.D. Cal. Civ.) (1985).

38. Brett Weiss, "Interview with Activision Co-Founder Jim Levy," *Brett Weiss Blog*, May 17, 2020.

39. Deposition of James H. Levy, Magnavox Co. v. Activision, Inc. (N.D. Cal. Civ.) (1985).

40. Deposition of James H. Levy, Magnavox Co. v. Activision, Inc. (N.D. Cal. Civ.) (1985).

41. Activision Business Plan (August 1979).

42. Backiel, "Alan Miller."

43. I first used this term in Mailland, "Nolan."

44. Here, I draw from the work of Mark Suchman, who identifies five elements of Silicon Valley legal practice: the lawyer as dealmaker, counselor, gatekeeper, proselytizer, and matchmaker; Suchman, "Dealmakers," 71–99.

45. Deposition of James H. Levy, Magnavox Co. v. Activision, Inc. (N.D. Cal. Civ.) (1985); see also *TVDigest*, April 28, 1980, p. 11.

46. Deposition of James H. Levy, Magnavox Co. v. Activision, Inc. (N.D. Cal. Civ.) (1985).

47. Deposition of James H. Levy, Magnavox Co. v. Activision, Inc. (N.D. Cal. Civ.) (1985).

48. Deposition of James H. Levy, Magnavox Co. v. Activision, Inc. (N.D. Cal. Civ.) (1985); "Ex-Atari Employees Sued for $20 Million," *Cash Box*, May 24, 1980.

49. Scott Stilphen, "DigitPress Interviews . . . Larry Kaplan," *Digital Press* (2006), https://www.digitpress.com/library/interviews/interview_larry_kaplan.html; Reeves, "Activisionaries."

50. Andrew Pollack, "The Game Turns Serious at Atari,", *New York Times*, December 19, 1982, section 3, p. 1.

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51. Scott Stilphen, "Bob Whitehead interview," *Atari Compendium* (2005), http://www.ataricompendium.com/archives/interviews/bob_whitehead/interview_bob_whitehead.html.

52. Reeves, "Activisionaries."

53. Deposition of Charles Paul, Magnavox Co. v. Activision, Inc., C 82 5270 THE (N.D. Cal. Civ.), February 22, 1983; Defendant's response to Plaintiff's Request for Production, Magnavox Co. v. Activision, Inc., C 82 5270 THE (N.D. Cal. Civ.), February 23, 1983.

54. David Crane, email to author, June 29, 2022. Jim Levy confirmed that Crane would not have been privy to the specifics of the agreement. Jim Levy, phone interview with author, April 20, 2023.

55. Scott Stilphen, Michael Albaugh interview, *Atari Compendium* (2017).

56. Mike Albaugh, interview with author, Mountain View, CA, October 17, 2019.

57. Scott Stilphen, Michael Albaugh interview, *Atari Compendium* (2017).

58. Jim Levy, phone interview with author, 2023.

59. Backiel, "Alan Miller."

60. Jim Levy, phone interview with author, 2023.

61. N. R. Kleinfield, "Videogame Industry Comes Down to Earth," *New York Times*, October 17, 1983, section A, 1.

62. Jim Levy, phone interview with author, 2023; Carla Meninsky, interview with author, San Francisco, CA, November 14, 2019. Imagic also produced games for the Intellivision. See Perry, Truxal, and Wallich, "Videogames."

63. Unregistered trademarks are also subject to protection, although there are significant advantages to registration. See generally 15 U.S.C. § 1125(a)(1)(A); United States Patent and Trademark Office, "Why Register Your Trademark?," https://www.uspto.gov/trademarks/basics/why-register-your-trademark; Two Pesos, Inc. v. Taco Cabana, Inc., 505 U.S. 763, 768 (1992); J. Thomas McCarthy, *McCarthy on Trademarks*, 5th ed., vol. 5 § 27:12 (2023).

64. United States Patent and Trademark Office, "Likelihood of Confusion," https://www.uspto.gov/trademarks/search/likelihood-confusion. Registration can also be denied if there is a likelihood of confusion with an unregistered mark. See, for example, Towers v. Advent Software, Inc., 913 F.2d 942, 945 (Fed. Cir. 1990); Ilsa, LLC v. Molly Ray Fragrance, 2023 TTAB LEXIS 31, at *5–6 (T.T.A.B. 2023).

65. Including from a party that owns a registered mark. See, for example, Playnation Play Sys. v. Velex Corp., 924 F.3d 1159 (11th Cir. 2019).

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66. John Laurenson, "Fake Designer Goods Cost France Dearly," *Deutsche Welle*, March 21, 2005, https://www.dw.com/en/fake-designer-goods-cost-france-dearly/a-1522689.

67. United States Department of Justice, *Criminal Resource Manual* 1715, "Trademark Counterfeiting—Requirements for a 'Counterfeit Mark,'" updated January 17, 2020, https://www.justice.gov/archives/jm/criminal-resource-manual-1715-trademark-counterfeiting-requirements-counterfeit-mark.

68. Universal City Studios, Inc. v. Nintendo Co Ltd, 746 F.2d 112 (1984).

69. Universal City Studios, Inc. v. Nintendo Co Ltd, 746 F.2d 112 (1984).

70. Gene Park, "The Real-Life Inspiration for Nintendo's Kirby Battled for Black Voters, against Police Brutality," *Washington Post*, November 20, 2019.

71. Marc Zablotny, "How Did Your Favourite Nintendo Characters Get Their Names?," *Official Nintendo Magazine*, September 20, 2012.

72. On Kee Games, see *Atari Business Plan* (1975), 8; Guins, *Atari Design*, 213, en 48.

73. United States Patent and Trademark Office, "Likelihood of Confusion," https://www.uspto.gov/trademarks/search/likelihood-confusion.

74. "Atari sues to K.O. Competition," *InfoWorld*, August 4, 1980.

75. The mark was filed for on September 15, 1980, published for opposition on October 6, 1981, and registered on December 29, 1981. Word Mark DRAGSTER, USPTO serial number 73277757.

76. U.S. Const. art. I §8, cl 8.

77. 17 U.S.C. § 1–215 (1976) (repealed 1976).

78. Gerardo Con Diaz, *Software Rights* (New Haven, CT: Yale University Press, 2019), 7. See also Mary Patricia Culler, "Copyright Protection for Videogames: The Courts in the Pac-Man Maze," *Cleveland State Law Review* 32, no. 3 (1984): 531–567.

79. 17 U.S.C. § 102 (1976).

80. Atari, Inc. v. North American Philips Consumer Electronics Corp., 672 F.2d 607 (7th Cir. 1982).

81. Atari, Inc. v. North American Philips Consumer Electronics Corp., 672 F.2d 607 (7th Cir. 1982).

82. Atari, Inc. v. North American Philips Consumer Electronics Corp., 672 F.2d 607 (7th Cir. 1982).

83. Atari, Inc. v. Amusement World, Inc., 547 F. Supp. 222 (D. Md. 1981).

84. Atari, Inc. v. Williams, 1981 WL 1400, 217 U.S.P.Q. (BNA) (E.D. Cal. Dec. 28, 1981).

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85. Culler, "Copyright Protection," citing Atari, Inc. v. Williams, 1981 WL 1400, 217 U.S.P.Q. (BNA) (E.D. Cal. Dec. 28, 1981).

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Chapter 5

1. Douglas C. McGill, "A Nintendo Labyrinth Filled with Lawyers, Not Dragons," *New York Times*, March 9, 1989, section A, 1. See also generally Andrew Johnson-Laird, "Software Reverse Engineering in the Real World," *University of Dayton Law Review* 19, no. 3 (1994): 843–902.

2. See, for example, Atari Games Corp. v. Nintendo of Am., Inc., 897 F.2d 1572 (Fed. Cir. 1990); Atari Games Corp. v. Nintendo of Am., Inc., 975 F.2d. 832 (Fed. Cir. 1992).

3. See, for example, Johnson-Laird, "Software Reverse Engineering," 853, fn23: "Would Newco have to sign a license to write a game to run on the IBM personal computer, for example?"

4. California Secretary of State, record # 1250804.

5. California Secretary of State, record #1500302.

6. Johnson-Laird, "Software Reverse Engineering," 853.

7. G. Gervaise Davis III, "Scope of Protection of Computer-Based Works: Reverse Engineering, Clean Rooms and Decompilation," in *Reverse Engineering*, ed. Epstein and Laurie, 27–79, at 55. See also William S. Coats and Heather D. Rafter, "The Games People Play: Sega v. Accolade and the Right to Reverse Engineer Software," *Hastings Communications and Entertainment Law Journal* 15 (1993): 557–559.

8. Scott Stilphen, "Bob Whitehead Interview," *Atari Compendium* (2005).

9. Davis, "Scope," 59; Johnson-Laird, "Software Reverse Engineering," 855.

10. Andrew Johnson-Laird, "Reverse Engineering of Software: Separating Legal Mythology from Actual Technology," *Software Law Journal* 5 (1992): 331–354, at 343.

11. Johnson-Laird, "Reverse Engineering of Software," 343.

12. Johnson-Laird, "Reverse Engineering of Software"; Johnson-Laird, "Software Reverse Engineering."

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13. Johnson-Laird, "Software Reverse Engineering," 851.

14. For example, Sega "conceded for purposes of its preliminary injunction motion that Accolade's games were not "substantially similar" to its programs—a required element of infringement under prevailing copyright law. See, for example, Atari Games Corp. v. Nintendo of America Inc., 975 F.2d 832 (Fed. Cir. 1992); Computer Assocs. v. Altai, 982 F.2d 693 (2d Cir. 1992). In any case, to state that Accolade's game programs are substantially similar to Sega's is analogous to saying that two 300-page novels are substantially similar because they both began with the phrase, "It was a dark and stormy night." A 300-page novel would consist of approximately a million bytes; "it was a dark and stormy night" would consist of thirty ASCII characters (each of the letters plus each of the spaces between the words being one byte)." Coats and Rafter, "Games People Play," 562, and fn18.

15. Johnson-Laird, "Reverse Engineering of Software," 334.

16. Johnson-Laird, "Software Reverse Engineering," 899.

17. Coats and Rafter, "Games People Play," 558.

18. See, for example, Davis, "Scope," 28.

Chapter 6

1. Gerardo Con Diaz, *Software Rights* (New Haven, CT: Yale University Press, 2019), 4–9.

2. Alice Corp. v. CLS Bank International, 573 U.S. 208 (2014).

3. See a discussion of the case and its import in Con Diaz, *Software*, 275–279. See also Jeffrey Lefstin, "Chapter 2: Subject Matter Eligibility," in *Patent Law: An Open-Source Casebook,* ed. Mark Janis and Ted Sichelman (Fall 2021), 57–100.

4. Con Diaz, *Software*, 5.

5. According to William Coats, the lead litigation lawyer for Accolade, "Sega had no relevant patents which is why it sued for copyright infringement and gimmicked up its so-called Trademark Security System once its licensees learned that Accolade had reversed engineered the Sega Genesis console and demanded that Sega do something to stop Accolade." Bill Coats, email no. 1 to author, July 20, 2021. "Sega counsel always described the TMSS as patented in the hopes that that would make a difference." Bill Coats, email no. 2 to author, July 21, 2021.

6. Note that since 1978, the rule is different for "works for hire," a category in which many console games fall. However, the copyright protection still remains in force for a very long period, especially compared to the patent regime: "In the case of a work made for hire, it is often difficult to identify any given individual as the author.

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Therefore, as to all such works, if they were created on or after January 1, 1978, instead of the term of 70 years p.m.a., copyright endures for a term of 95 years from the year of first publication of such a work, or a term of 120 years from the year of its creation, whichever expires first." Melville Nimmer, *Nimmer on Copyright* 3 § 9.10 (2022).

7. Con Diaz, *Software*, 7.

8. Con Diaz, *Software*, 7.

9. Sega Enterprises Ltd. v. Accolade, Inc., 785 F. Supp. 1392 (N.D. Cal. 1992); 1992 U.S. Dist. LEXIS 4028; 23 U.S.P.Q.2D (BNA) 1440; Copy. L. Rep. (CCH) P26,895; 1992 1 Trade Cas. (CCH) P69,831; 92 Daily Journal DAR 5502.

10. Sega Enterprises Ltd. v. Accolade, Inc., 785 F. Supp. 1392 (N.D. Cal. 1992).

11. 17 U.S. Code § 107. Emphasis added.

12. A technical note here: she reached her decision after contrasting the Copyright Act to the Semiconductor Chip Protection Act, in which Congress had created a specific protection for reverse engineering. That law specifically allows one to make intermediate copies of a silicon chip in the course of reverse engineering.

13. 785 F. Supp. 1392; 1992 U.S. Dist. LEXIS 4028; 23 U.S.P.Q.2D (BNA) 1440; Copy. L. Rep. (CCH) P26,895; 1992 1 Trade Cas. (CCH) P69,831; 92 Daily Journal DAR 5502.

14. Davis, "Scope," 28.

15. Sega Enters. v. Accolade, Inc. (9th Circuit 1992), 977 F.2d 1510 (Amended); 1992 U.S. App. LEXIS 26645; 24 U.S.P.Q.2D (BNA) 1561; Copy. L. Rep. (CCH) P27,001; 92 Cal. Daily Op. Service 8612; 2 Daily Journal DAR 14275 1993 U.S. App. LEXIS 78; as amended, 93 Daily Journal DAR 304.

16. He also debunked Judge Caulfield's decision that the language and legislative history of the Semiconductor Chip Protection Act, by authorizing the copying of the physical representation of the computer program embedded in the chip through peeling of the chip in the course of reverse engineering, established that Congress did not intend for disassembly of object code to be considered a fair use. He pointed out that the legislative history simply revealed that Congress had passed the Semiconductor Chip Protection Act "because it believe that semiconductor chips were intrinsically utilitarian articles that were not protected under the Copyright Act," and that Congress had "expressly stated that it did not intend" to affect the scope of copyright protection in computer programs embodied in the chips. In other words, just because Congress expressly allowed reverse engineering by peeling does not mean that Congress, by the same token, meant to reject fair use protection for reverse engineering through software disassembly.

17. Atari Games Corp. v. Nintendo of Am., Inc., 975 F.2d. 832 (Fed. Cir. 1992).

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18. Atari Games Corp. v. Nintendo of Am., Inc. (N.D. Cal., 1991), C-88-4805-FMS, C-89-0027-FMS, C-89-0824-FMS, 1991 U.S. Dist. LEXIS 5519; 18 U.S.P.Q.2D (BNA) 1935; Copy. L. Rep. (CCH) P26,703.

19. Atari Games Corp. v. Nintendo of Am., Inc., 975 F.2d. 832 (Fed. Cir. 1992).

20. See Roscoe Pound, "On Certain Maxims of Equity," in *Cambridge Legal Essays: Written in Honour of and Presented to Doctor Bond, Professor Buckland and Professor Kenny*, 259, 263–264 (1926), as cited by T. Leigh Anenson, "Announcing the 'Clean Hands' Doctrine," *UC Davis Law Review* 51, no. 5 (October 3, 2017): 1847.

21. See Ralph A. Newman, *Equity and Law: A Comparative Study* (Dobbs Ferry, NY: Oceana Publications, 1961), pp. 31 and 250 n19, as cited in T. Leigh Anenson, "Announcing the 'Clean Hands' Doctrine."

22. Of course, they weren't alone, just like "the great inventor" is rarely alone. They were both part of a panel of three judges. That panel benefited from the expertise of law professors filing amicus briefs and of expert witnesses such as, in the case of Accolade, Andrew Johnson-Laird. But they were also bombarded by counter briefs and counter testimonies, and it was they who weeded out the good from the bad arguments.

23. Ed Logg, interview with author, San Jose, CA, November 11, 2019.

24. Also note one last, very technical, caveat: Atari copied more than it needed, including nonfunctional elements, and would have been denied the fair use defense on that part of the copying. The import of this caveat is that the fair use defense protects only the intermediate copying of what is strictly necessary to ensure *backward* compatibility, but not the intermediate copying of code that is not functional at the time but is copied to ensure potential *forward* compatibility.

25. Con Diaz, *Software*, 81.

26. Sony Computer Entertainment, Inc. v. Connectix Corp, 203 F.3d 596 (2000).

27. "Macworld Expo SF '99 Superlatives," *TidBits*, January 18, 1999, https://tidbits.com/1999/01/18/macworld-expo-sf-99-superlatives/.

28. Sony Computer Entertainment, Inc. v. Connectix Corp, 203 F.3d 596 (2000).

29. 17 U.S.C. 1201.

30. Bennett Herbert, "Game Over: Copyright Issues in the Modern Videogame Landscape," *University of Cincinnati Law Review*, April 16, 2021.

31. See, for example, Zack Zwiezen, "Take-Two Interactive Removes More GTA Mods Using DMCA Strikes," *Kotaku*, November 13, 2021, https://kotaku.com/take-two-interactive-removes-more-gta-mods-using-dmca-s-1848053219; Ian Walker,

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32. United States v. Reichert, 747 F.3d 445, 448 (6th Cir. 2014). See generally Bennett Herbert, "Game Over: Copyright Issues in the Modern Videogame Landscape," *University of Cincinnati Law Review*, April 16, 2021, https://uclawreview.org/2021/04/16/game-over-copyright-issues-in-the-modern-video-game-landscape/.

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2. Al Alcorn, personal interview no. 1 with author, 2019.

3. Al Alcorn, personal interview no. 2 with author, 2020.

4. U.S. Patent No. 4,057,251 (filed May 10, 1976) (issued November 8, 1977).

5. Paul F. Beall, personal interview with author, Rosemont, IL, May 26, 2018.

6. See generally David Sheff, *Game Over: Press Start to Continue*, with Andy Eddy (Wilson, CT: GamePress, 1999).

7. Atari Games Corp. v. Nintendo of Am., Inc., 897 F.2d 1572 (Fed. Cir. 1990); Louise Kehoe, "Nintendo Faces Antitrust Move," *Financial Times*, December 8, 1989; William M. Welch, "Congressman Asks Justice Antitrust Probe of Nintendo," Associated Press, December 7, 1989.

8. For more on strategies, see generally the rich volume by Gerstman, *Clear and Convincing Evidence* (Bloomington, IN: AuthorHouse, 2013).

9. Suchman, "Dealmakers and Counselors: Law Firms as Intermediaries in the Development of Silicon Valley," in *Understanding Silicon Valley: The Anatomy of an Entrepreneurial Region*, ed. Martin Kenney (Stanford, CA: Stanford University Press, 2000), 87.

10. See, for example, Julien Mailland, "Oral History of Lon Allan," *Silicon Valley Archives*, Department of Special Collections, Stanford University Libraries, March 16, 2020.

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2. Rating Videogames: A Parent's Guide to Games: Joint Hearings before the Subcommittee On Juvenile Justice of the Committee On the Judiciary and the Subcommittee On Regulation and Government Information of the Committee On Governmental Affairs, United States Senate, One Hundred Third Congress, First Session . . . December 9, 1993, March 4, and July 29, 1994. Washington: U.S. G.P.O., 1995.

3. See generally Conor Friedersdorf, "The Mayor Who Took a Sledgehammer to NYC's Pinball Machines," *The Atlantic*, January 18, 2013, https://www.theatlantic.com/politics/archive/2013/01/the-mayor-who-took-a-sledgehammer-to-nycs-pinball-machines/267309/.

4. "Pinball as 'Racket' Fought by Mayor," *New York Times*, January 29, 1942, p. 21.

5. Carly Kocurek, *Coin-Operated Americans* (Minneapolis: University of Minnesota Press, 2015), 94.

6. See, for example, Michael Schiess, "The Mob, the Mayor, and Pinball," *Public CEO*, October 10, 2016, https://www.publicceo.com/2016/10/the-mob-the-mayor-and-pinball/. See also Aladdin's Castle, Inc. v. City of Mesquite, 434 F. Supp. 473 (N.D. Tex. 1977) at 475: "The police also appear to have information to the effect that Bally Manufacturing Co. is somehow linked to the 'mafia' or the 'Cosa Nostra.'"

7. Kocurek, *Coin-Operated*, 94.

8. See, for example, in the case of France Alexis Blanchet and Guillaume Montagnon, *Une histoire du jeu vidéo en France* (Houdan, France: Pix'N Love, 2020), 101. See also in general Mark Wolf, ed., *Videogames Around the World* (Cambridge, MA: MIT Press, 2015).

9. J. C. Herz, *Joystick Nation* (London: Abacus, 1997), 46.

10. Herz, *Joystick*, 46.

11. Herz, *Joystick*, 44.

12. Aladdin's Castle, Inc. v. City of Mesquite, 434 F. Supp. 473 (N.D. Tex. 1977) at 476.

13. Death Race, 1976 advertisement, cited in Kocurek, *Coin-Operated*, 77.

14. Kocurek, *Coin-Operated*, 68.

15. Kocurek, *Coin-Operated*, 84; Larry Young, "Local Safety Authorities Denounce Game," *Spokesman Review*, December 29, 1976, 10.

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